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THE UNIVERSITY OF ALBERTA

INTERNAL MIGRATION, POPULATION REDISTRIBUTION AND URBANISATION IN GHANA.

by

DAVID JOE ACHANFUO-YEBOAH

©

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY
IN
DEMOGRAPHY

DEPARTMENT OF SOCIOLOGY

EDMONTON, ALBERTA
SPRING 1990

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Internal Migration, Population Redistribution and Urbanisation in Ghana. submitted by David Joe Achanfuo-Yeboah in partial fulfilment of the requirements for the degree of Doctor of Philosophy in demography.

....

P Krishnan Supervisor

....

L Kennedy

....

H C Northcott

....

D S Gill

....

V Piché External Examiner

Date 3/11/1989

Dedication

This thesis is dedicated to my father, Prince Kwame Achanfuo-Yeboah and the entire family

Abstract

Throughout this study, an attempt has been made to provide information on the nature, patterns, and trends of internal migration and urbanisation in Ghana. Adequate and appropriate knowledge of the processes of internal migration and urbanisation is essential for the socio-economic development of the country. Several direct and indirect methods, as well as such new technique as entropy flows, have been employed in the study.

The results reveal wide disparities in net migration to the ten administrative regions. Greater Accra has been the principal migrant receiving region during the 1960-84 period, while the Volta Region was the main migrant sending region. With regard to urbanisation, Greater Accra continues to have the largest proportion of population classified as urban; it contains the capital city of Accra, which is the only primate city in the country. Another interesting finding is that Ghana is not over-urbanised despite the rapid urbanisation which is taking place in the country. It is worthwhile to note that population growth and employment are the leading determinants of internal migration, while the main determinants of urbanisation are population growth and net migration.

Achnowledgements

I owe a lot of people for their assistance in diverse ways which made it possible to produce this thesis. I am particularly grateful to my supervisor, Prof P Krishnan, for his advice, constructive criticism, and other assistance without which the thesis could not have been produced in its present content and form. Similarly, I acknowledge the immense assistance, constructive criticism, and advice of Professors D S Gill, L Kennedy, and H C Northcott, who are members of the thesis supervisory committee.

It will be a serious error to forget to acknowledge the assistance received from Linda Abbott and Denise Joseph in connection with textform and related computer work, Lynn Van Reede for diverse assistance, and Kerri Calvert for library assistance.

I must also acknowledge the financial assistance received from the Canadian Commonwealth Scholarship and Fellowship Plan and the Department of Sociology which enabled me to undertake the studies at the University of Alberta. I also wish to thank the scholarships Secretariat of Ghana for nominating me for the award.

Finally, I wish to present my very sincere thanks to my family for their support, and for enduring the pain of neglect which is normally associated with long hours of research work. And now to all those who assisted in various ways and who have not been mentioned here I say thank you.

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1. Chapter One: Introduction

Human mobility in general and internal migration, in particular, have been receiving much attention in the literature because of their growing importance. The now widely accepted role of internal migration, population redistribution and urbanisation in development planning cannot be overemphasised. Hodder (1968) explains that the development of a nation depends not only on her natural resources, but equally or more so on her human resources. It is becoming increasingly imperative for developing countries to strive to develop fully their human resources, both qualitatively and quantitatively, and to ensure that they derive maximum benefits from their manpower. Internal migration and urbanisation affect the attainment of this goal, as they involve the movement of people from one part of the country to the other.

Also internal migration has serious and definite consequences on development in both the areas of origin and destination. Some of these may be positive and beneficial, while others may be negative and adverse. In areas where definite migration patterns exist, a sure way of ensuring the success of development plans is to incorporate those in the plan. This is because the redistribution of population has to be emphasised in the formulation and implementation of appropriate policies.

From a demographic point of view, internal migration is important for its effects on age, sex, and household composition of the population, as well as its direct implications for fertility and population growth. Migration is generally age, sex, income, and race selective. In most parts of the world, migration involves young male adults in the 20-29 age range. Consequently there is an age and sex imbalance mainly in the areas of origin, and sometimes in the areas of destination. This also affects the number of people eligible for marriage and consequently there may be a decline in marriage in the areas of origin in particular and, correspondingly, a reduction of fertility in some areas (Achanfuo-Yeboah, 1983:55).

Khoo and Rowland (1985:165) summarise this as follows:

> 'Also Because of the interrelationship between processes, internal migration has a bearing upon the explanation of trends in such phenomena as marriage, fertility, mortality, household composition, family roles, and labour force participation'.

Migration, therefore, influences the socio-demographic structure of a population and the rate of natural increase (Young, 1980:112). In addition, Shaw, (1975) notes that migration is an important cause and effect of social and economic change. Migration has implications as migrants adopt new life styles, attitudes, and culture from the area of destination, while passing on their culture at the same time. Todaro (1976) shows that the economic situation of migrants also changes as they get into salaried and wage-earning employment (see, also, Segal 1972). It should also be mentioned that some migrants experience a decline in their economic situation. This occurs in the event where the migrant fails to obtain the expected job and wages.

The growing importance of internal migration and urbanisation in Africa cannot be overemphasised. In a continent where individual countries have much regional disparities in the provision of socio-economic facilities, most people move a number of times during their life time within their countries of residence. People move from one part of an African country to the another for paid employment, education, healthcare, and to enjoy urban life (Goldscheider, 1971). This situation, it should be noted, is not peculiar to Africa. Zachariah (1964) indicates that similar conditions are found in India. Tracing the historical development of internal migration in India, Zachariah points out that migration occurs in India for a variety of reasons including search for paid employment and fertile lands. As indicated later, internal migration in Africa has taken the form of rural-rural and rural-urban movements, the latter resulting in rapid urbanisation.

With regards to West Africa, the available empirical evidence indicates the existence of urbanisation and various forms of internal migration (Gaisie and de Graft-Johnson, 1976; Gwan, 1976; and Udo, 1975). The evidence points also to similarities in forms of migration in West Africa to the rest of Africa. Internal migration in most West African countries, like other African countries, results in urbanisation with the associated problems of congestion, insecurity, inadequate housing, education, transportation, and healthcare. This increasing urbanisation, it should be noted, is largely the result of rural to urban migration and natural increase (Preston, 1979). Despite this, Gwan (1976) shows that the predominant form of internal migration in Cameroun is rural-rural. Udo (1975) draws the same conclusion for Nigeria, and it is believed that the situation will be the same in Ghana and other West African countries.

Internal migration is particularly important in Ghana, where rural-urban migration results in rapid urbanisation with the attendant problems of inadequate housing, transportation, food, health and educational facilities. The city of Accra continues to expand with a population of 859,662, according to the 1984 population census. Long (1980, cited in Kennedy 1983:53) points out that some options available to governments for the control of city growth include the establishment of green belts and new towns. Unfortunately, lack of financial resources prevents the government of Ghana from incorporating such measures. Rural-urban migration and urbanisation continues unabated and the problems are increasing in magnitude.

This thesis is going to be on Ghana, and hence there is a need for a detailed historical, demographic, social, and economic profile on Ghana.

A. The Problem and Rationale behind the study

As has been mentioned, migration is important in development planning. Even so, most developing countries like Ghana do not include migration data in their development plans. This is due largely to the lack of adequate, accurate, and reliable statistical monitoring systems designed to gather data on the levels, patterns and trends in migration within the country. The problem is that the task of restructuring the socio-economic, and demographic situation in Ghana cannot be done without the inclusion of migration data, and a thorough knowledge and understanding of the processes of internal migration, population redistribution and urbanisation. There is a need to study internal migration in Ghana to throw more light on this subject, and to allow for the formulation and implementation of appropriate policies.

Furthermore, the proposed study is justified in the sense that the literature review revealed that only little work exists on internal migration and urbanisation in Ghana and that there is a need for more research in this area. Perhaps paucity of data on migration may account for this lack of adequate research. It must be mentioned that some of the studies on migration such as Caldwell(1969) has actually come from fertility enquiries and not from migration research as such. In addition, the existing studies on urbanisation tend to focus on some determinants and consequences of internal migration and rapid urbanisation, neglecting migration estimates.

In addition to the lack of empirical studies, the proposed study is justified in that internal migration and urbanisation are important in Ghana, as already discussed. Attempts by various Ghanaian governments to divert and restrain unwanted movements have failed because of the lack of appropriate data on the estimates and determinants of internal migration and urbanisation. U N (1987:83) notes the importance of such studies by reporting that problems of population distribution and patterns of internal migration were viewed by countries as among the most acute population problems.

B. Aims, Objectives, and Scope of the Study

In view of the above discussion, the main objective of this research is to provide recent and accurate information on internal migration, population redistribution and urbanisation in Ghana. The study will examine the changes in the spatial distribution of population in the country since 1960. The basic unit of analysis is the administrative region (Fig 1). The 1960 and 1970 administrative regions have been reclassified to conform to the 1984 set of regions. In 1970, there were nine regions (figure 2), while the country had only seven regions in 1960 (figure 3). Certain districts in the then Western Region of Ghana were put together to constitute the Central Region. The northernmost districts of the 1960 Northern Region were also redesignated the Upper region. By 1984, the Upper West Region has been formed from the western districts of the Upper Region. The data for 1960 and 1970 have been re-arranged to conform to the 1984 regions where necessary. It should be noted that whole districts and not parts of districts have been put together to form new regions and that, as a result, no problems of overlapping of boundaries occur. Gaisie and de Graft-Johnson (1976) use the same approach to re-arrange the 1970 data to conform to the

Fig 1. Administrative Regions of Ghana, 1984

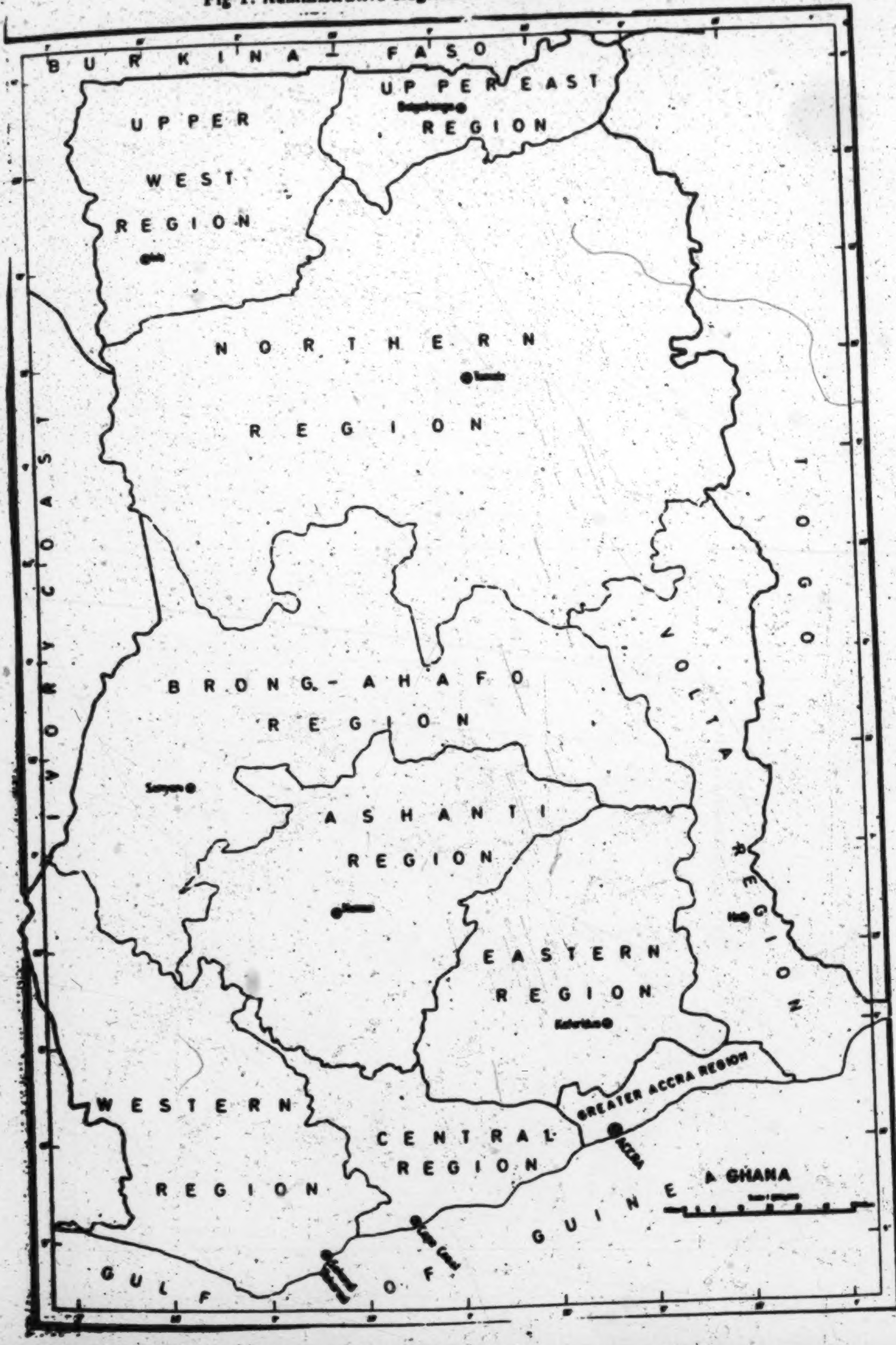
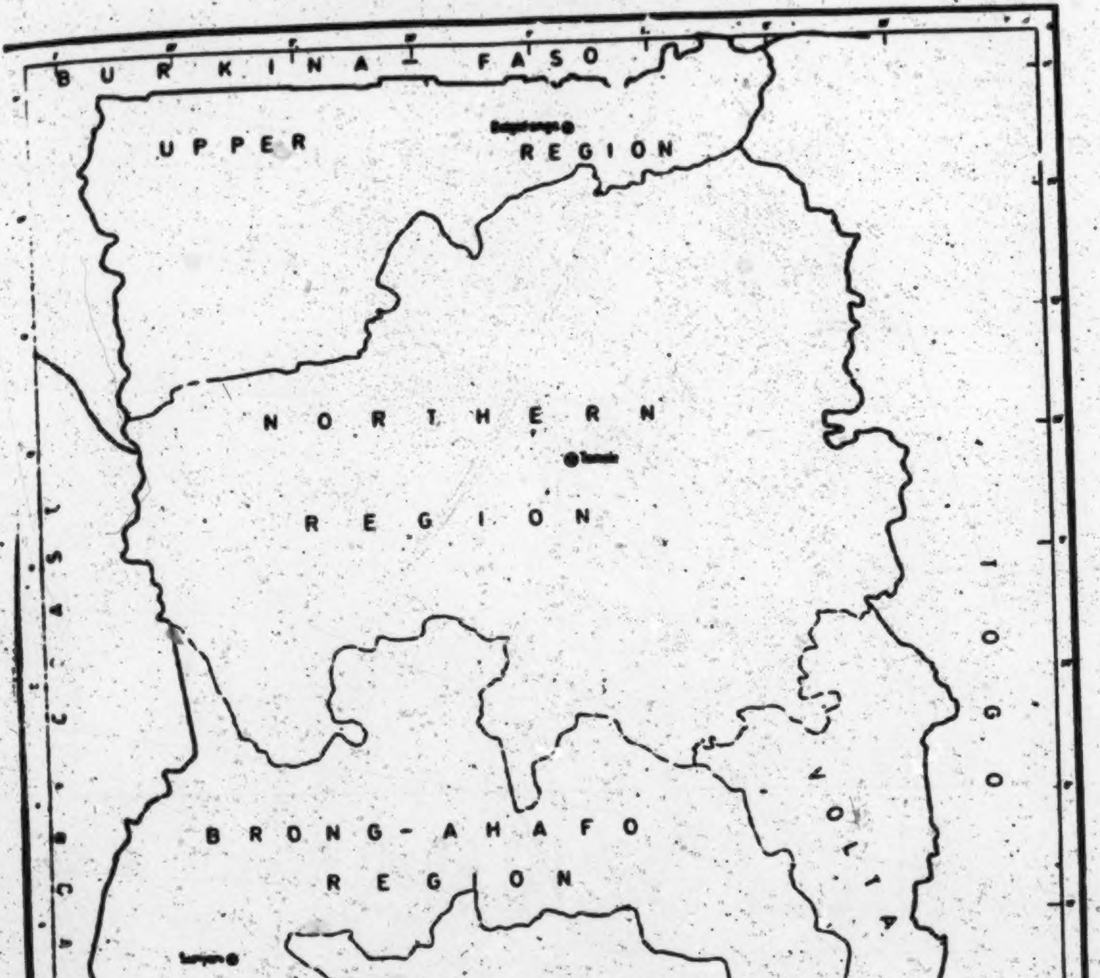

BURKINA FASO
UPPER EAST REGION
UPPER WEST REGION
NORTHERN REGION
IVORY COAST
TOGO
BRONG-AHAFO REGION
Sunyani
ASHANTI REGION
VOLTA REGION
Ho
EASTERN REGION
GREATER ACCRA REGION
ACCRA
WESTERN REGION
CENTRAL REGION
GULF OF GUINEA
GHANA

Fig 2. Administrative Regions of Ghana, 1970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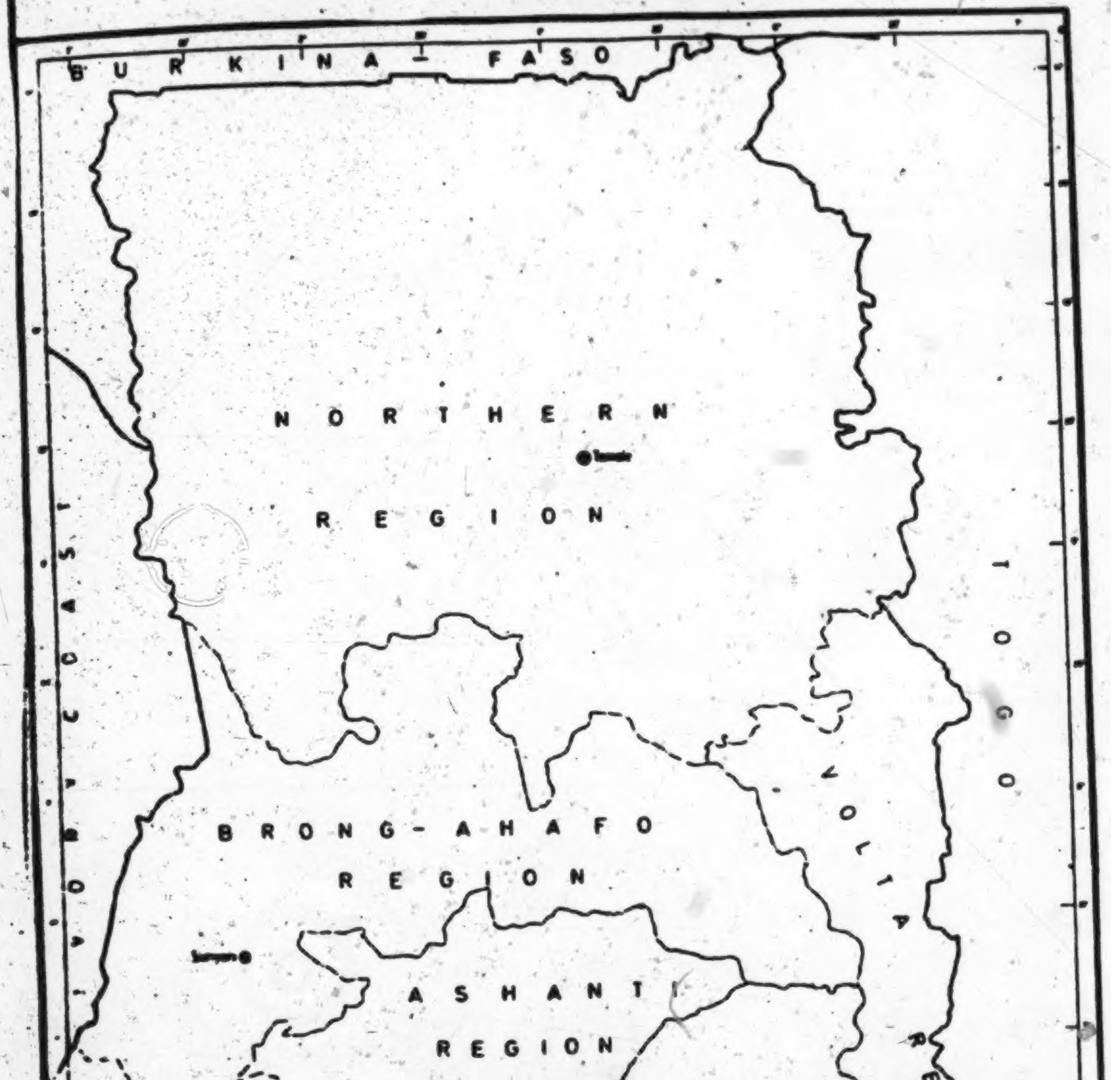
WESTERN REGION
CENTRAL REGION
A GHANA
GULF OF GUINEA

Fig 3. Administrative Regions of Ghana, 1960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ACCRA
Ho
GULF OF GUINEA
GHANA

1960 administrative regions. The study will also use a number of variables, as explained in the section on methodology, to study the determinants of internal migration and urbanisation in Ghana. The study will test the applicability of the push-pull theory to Ghana. It will determine if the administrative regions with good employment and educational opportunities are major receiving areas, and regions lacking such amenities major sending areas.

The study, therefore, has a specific scope aimed at achieving the stated objectives. There are nine chapters. Chapter one is the introduction which presents the importance of migration and urbanisation, the rationale behind the study, as well as the aims, objectives, and scope of the study. In chapter two a profile of Ghana is presented with a view to providing background (historical, economic, social, and demographic) information about the country. This is necessary to allow for a better understanding of the nature of internal migration and urbanisation in Ghana. Chapter three presents data sources, methodology and limitations of the study, while major theoretical and empirical perspectives on migration are discussed in chapter four. In chapter five, the pattern of internal migration in Ghana is discussed while urbanisation is discussed in the next chapter. Policy implications and other substantive determinants of internal migration and urbanisation in the country are further discussed in chapter seven; in chapter eight, an attempt is made to present a conceptual framework for the study of internal migration and urbanisation. Finally, chapter nine is the conclusion where the main findings of the dissertation are sumarised, and the recommendations of the study presented.

II. Chapter Two: A Profile of Ghana

A. Historical Background

Ghana attained independence from Britain in 1957 and became a Republic within the Commonwealth in 1960. The Republic of Ghana lies in the west coast of Africa and was formerly called the Gold Coast. Ghana lies in the tropical belt and is very close to the equator, extending from latitude 4 1/2 N to 11 N of the equator. It also extends over 672 kilometres from north to south and some 526 kilometres from east to west. Ghana is divided into ten administrative regions: Greater Accra, Ashanti, Eastern, Central, Western, Brong-Ahafo, Northern, Upper East, Volta, and Upper West. As the national capital, Accra is the seat of government and the main centre of commercial activity; it is also the country's biggest city and has the largest concentration of population. The second largest city is Kumasi which is situated in Ashanti in the heart of Ghana. Other important towns include Cape Coast, Tamale, Koforidua, Sekondi-Takoradi, Ho, Bawku, and Wa (see map in fig 1 for proper appreciation of the geographical location of these towns).

B. Population

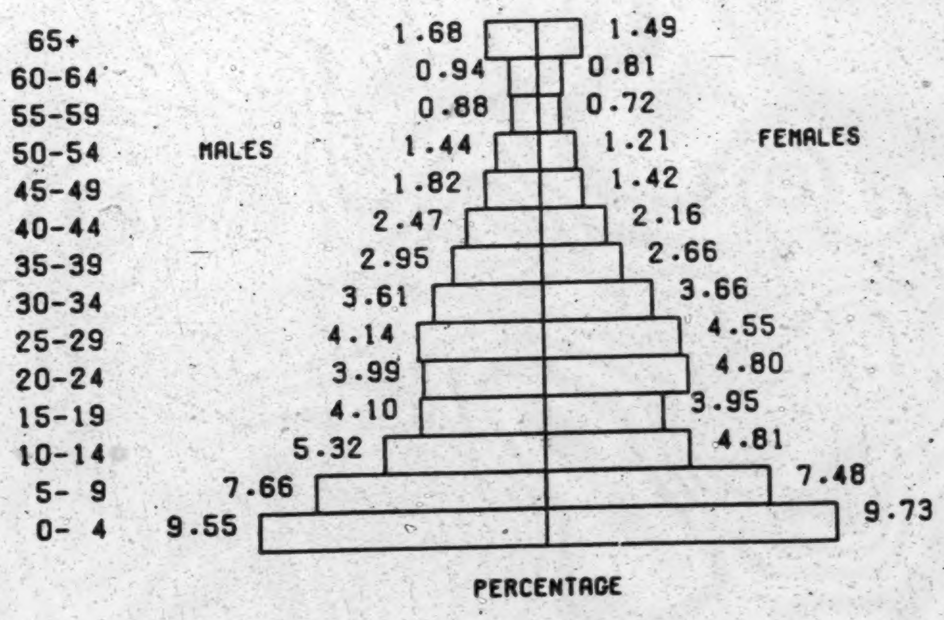
The population of Ghana was 8,559,313 in 1970 and this increased to 12,205,574 in 1984. According to the Population Reference Bureau's World Population Data Sheet, Ghana's population was 14.4 million in 1988. Greater Accra's population was 903,447 in 1970 and this increased by 57.2 % to 1,420,066 in 1984. Out of the 1.4 million people living in the Greater Accra region in 1984, 859,662 lived in the city of Accra. Perhaps the salient demographic characteristic of Ghana during the last decade has been its rapid population growth and the accelerated growth of the main cities, especially Accra. The rapid increase in city population is due to both rural-urban migration and natural increase. Hauser (1960:93-130) corroborates this view as he shows that, even in the United States, there has been an increasing concentration of population in urban and metropolitan areas with time. He asserts that the explosive growth of urban and metropolitan population is, in part, the result of explosive total population, even though urban-turnaround is also present. Ghana continues to have high fertility and mortality. With a total fertility rate of 6.4 and a crude birth rate of 42 per thousand, the country has one of the highest fertility rates in the world. Ghana has a crude death rate of 17 per thousand. This means that Ghana has a rate of natural increase of 25 per thousand.

Figures 4, 5, and 6 show the age-sex pyramid for Ghana in 1960, 1970, and 1984. The pyramids epitomize the pattern exhibited by most high fertility societies and developing countries, showing a broad base which gradually tapers to the top. In 1960, 44.5 % of the population was in the 0-14 years age group, 52.3 % in the 15-64 years age group, and 3.2 % in the over 65 years age group. By 1970, 46.9 % were in the age group 0-14 years, 49.5 % in the 15-64 group, and 3.6 % in the over 65 years category (figure 5). The corresponding percentages for 1984, were 45.0, 51.0, and 4.0 respectively for the 0-14 years, 15-64 years, and over 65 years age groups (figure 6). It is interesting to learn that the proportion of the population in the over 65 years group continues to increase with time during the study period. While in 1960 only 3.2 % of the population was enumerated in this old age group, the percentage increased to 3.6 in 1970 and 4.0 by 1984. Perhaps improvements in mortality should account for this, even though this is not typical of a high fertility society. Also, while in 1960 Ghana's population could be classified as 'young' according to the United Nations coefficient of old age, by 1984 the population of Ghana has become 'mature' according to the same definition. Further discussion of the age-sex structure of the population is presented elsewhere in this study.

C. Economy

Cocoa is the main cash crop and the leading foreign exchange earner. Agriculture is the mainstay of the Ghanaian economy, accounting for 65 per cent of the labour force. Agriculture is also the largest single contributor to the gross domestic product, (GDP) accounting for 47.7 % of the GDP in 1975, 53.4 % in 1980, and 51.6 % in 1985 (Ghana Statistical Service, 1988a). Ghana Statistical Service (1988a) also reveals that there has been

Fig 4. Age-Sex Population Pyramid, Ghana, 1960



COMPILED FROM
1960 CENSUS RESULTS

Fig 5. Age-Sex Population Pyramid, Ghana, 1970

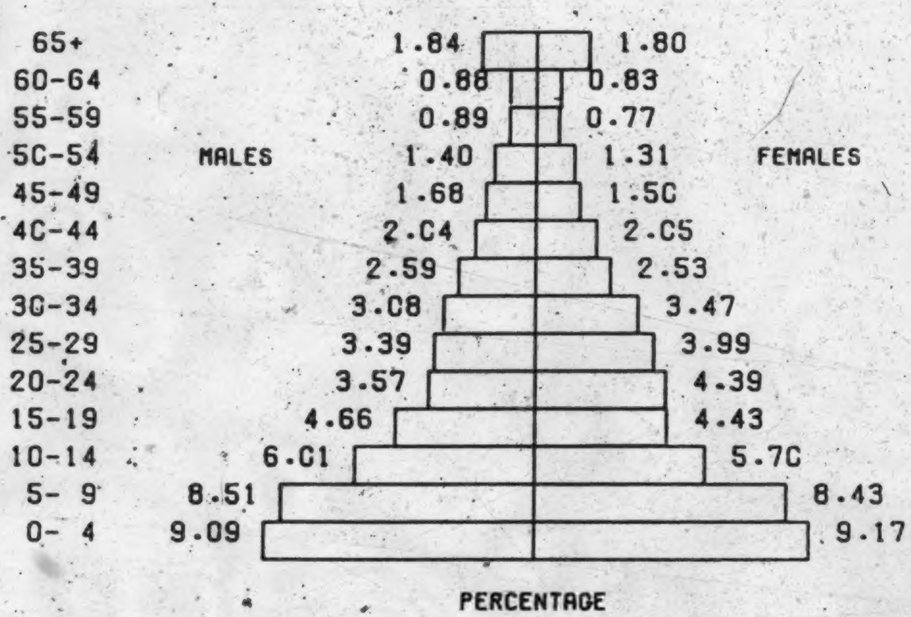
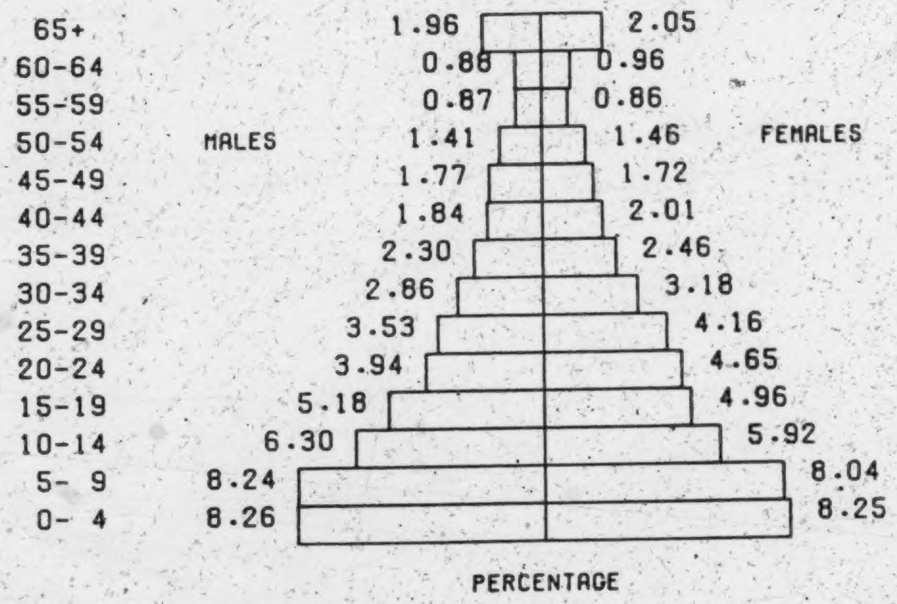


Fig 6. Age-Sex Population Pyramid, Ghana, 1984



SOURCE: 1984 POPULATION CENSUS

an increase in agricultural output since 1975. Total output increased from 1622.5 million cedis in 1975 to 118163.1 million cedis in 1984, and 188583.3 in 1986. The cedi is the unit of currency used in Ghana and the rate of exchange with the United States dollar is 278 cedis= $1 US.

The country also has several types of base metals including gold, manganese, diamonds and bauxite. Oil is drilled on a small scale along the coast of Saltpond, while exploration for large scale oil drilling is going on in many parts of the country. Manufacturing industries, located mainly in Accra, Tema, and the other cities have contributed significantly to the economy since the country adopted import-substitution industrialisation strategy after independence. The contribution of the manufacturing sector to the country's GDP decreased from 13.9 % in 1975 to 10.4 % in 1980, 6.9 % in 1984, and 8.9 % in 1986. The sectors of the economy which increased their contribution to the GDP during the study period include transport and communication and finance, insurance, and real estates.

The percentage of the population which was economically active did not change much between 1960 and 1970, even though differentials by region and sex are discernible. Of the total population 15 years and over, 73.0 % was economically active in 1960, 73.3 % in 1970, and 82.5 % in 1984. 89.0 % of the male population 15 years and over was economically active in 1960, and this decreased slightly to 83.5 % in 1970 and 1984. The corresponding figures for females were 81 % and 83.1 % respectively for 1960 and 1984. It is also interesting to find out that 94.0 % of the economically active population was employed in 1960 and 1970, and that this percentage increased to 97.2 % in 1984 (Ghana Statistical Service, 1988a). In addition, GDP in millions of cedis at 1975 constant prices increased from 5537.5 in 1980 to 5701.9 in 1986.

D. Social Development

The country has also attained great achievements in education; Ghana is one of the few African countries where education is widespread (Zachariah and Conde, 1981). There are three universities and several institutes of advanced education such as the polytechnics, institutes of languages and journalism. Compulsory and free primary and middle school education was introduced in september 1961, while secondary education became free in september 1965. University and higher education, it should be noted, have always been fee-free for tuition as well as boarding and lodging. Recent trends in education have been to provide more educational facilities so as to achieve universal primary education.

The percentage of government's total recurrent and development expenditure spent on education increased from 17.1 in 1980 to 18.3 in 1982, 20.2 in 1984 and 26.7 in 1985/86, an increase of over 56 % between 1980 and 1985/86. The proportion of the population 6 years and over who have attended school also increased from 27 % in 1981/82 to over 43 % in 1982/83 and almost 57 % in 1983/84. In addition, enrolments in all levels of education have increased greatly during the study period.

It must also be mentioned that the number of dwellings in the country has increased tremendously during the study period. The total number of occupied houses increased from 649720 in 1960 to 880869 in 1970 and 1216677 in 1984, an increase of over 87 %. Sight should also not be lost of the fact that the number of hospitals, doctors, hospital beds and related health facilities has also increased, even though the facilities are still inadequate.

III. Chapter Three: Sources of Data, Methodology and Limitations

A. Sources of Data

The principal sources of data for this study will be the census reports of 1960, 1970, and 1984. Although some work has been done on internal migration in Ghana, only data from the 1960 and 1970 censuses have been used. Fortunately, some data are available from the 1984 population census to allow for the type of analysis already outlined and this will provide very recent information about the topic. The census reports have a great variety of data. The place of birth data will allow for estimating life-time in-migrants, life-time out-migrants, and net migrants to each region, as well as interregional migration. The census reports also contain data which can be used to compute various rates and ratios on internal migration and urbanisation. A ratio of the number of people enumerated in each region for each census date to the area of the region may also permit the computation of population density for the regions. The age-sex distribution of population available in the census reports will further allow the use of census survival ratio method, life table survival ratio technique, and the simultaneous application of the two methods to estimate migration. There are also data from the census on the size of settlements, and the population classified as urban for the census dates in the study period, permitting some urban analyses. Data on education and health have been obtained from the Ministries of Health, and Education, and on electricity from the Electricity Corporation of Ghana. As explained in the introduction, education as a variable is represented by the number primary schools, and the regional distribution of these schools is used in the regression analysis. It has also been mentioned that employment opportunity as a variable will be represented by the regional economic activity rates which are computed from census data. Socio-economic facilities are represented by indicators of electricity and health in addition to the number of schools. The regional distribution of health centres, and the regional consumption of electricity will be used in the study.

In addition, the study will avail itself of the existing theoretical and empirical evidence in the literature regarding internal migration, population redistribution and urbanisation in

Ghana. Relevant evidence from studies in other African countries will be reviewed and, if applicable, used in the analyses.

The main limitation of the study is that it will base itself on census data. These data do lend themselves to the analysis of mainly life time migration. A number of movements occur during the intercensal period and are, therefore, not included in census data. Such movements can only be studied thoroughly in specific surveys. However, the available census data will provide information on life-time in-migrants, life-time out-migrants, and the net intercensal migration for each administrative region for the period 1960-70, and 1970-84. Life-time migrants for any particular census date are those people who were enumerated in a region other than their region of birth.

Besides, like census data in most other countries, the data are flawed as regards age misstatements and misreporting. An attempt is made in this study to overcome this problem by using broad age groups. This is likely to minimize the effects of age errors on the estimates. Even though Ghanaian census data have been acclaimed as good (see, for example, Wogugu, 1974), completeness of enumeration cannot be guaranteed to be the same for the three censuses in the study period, neither will it be correct to assume that content errors are the same for the three censuses. The study, however, tries to reduce the effects of such errors by using broad age groups and administrative regions.

It must be cautioned that migration data are the most defective of all demographic data in most areas (Kuper, 1965), and Ghana is no exception. U N (1987:9) writes:

> 'the lack of statistical data on migration is well known: of the 13 recommendations adopted by the Expert Group on Population Distribution, Migration and Development, three deal with problems of basic data'.

It goes without saying that what has been done in this study has been to produce some estimates and determinants of internal miration and urbanisation from the limited data available.

B. Methodology

The methodology for a migration study such as this is multi-faceted, and the statistical procedures to be followed in this study have been dictated by the type and availability of data, as well as the objectives and scope of the dissertation. Since census data are to be used in the analysis, the techniques to be employed are mainly those appropriate to census data.

Several methods are used and these include entropy flows, rates and ratios, direct and indirect methods, as well as regression analysis. This is necessary to allow a comparison of methods and to allow for the selection of the technique which produced the best results as done elsewhere in the study. Each of the three main parts of the study, internal migration, population redistribution, and urbanisation, begins with a statistical description of the phenomenon. Such a description will show the changes in the regional distribution of population in Ghana since 1960, and help establish the nature, patterns, and trends in population redistribution in that country. This type of analysis will also indicate the rate at which newer urban settlements develop, and establish the regions in which cities and other urban centres tend to concentrate.

As regards internal migration, the statistical description will show the types of movements within the country, the major migrant receiving areas, as well as the major sending areas. It must be noted that these desciptive statistics will be generated for the country as a whole, as well as the administrative regions for the study period.

Four groups of methods will be used to estimate internal migration. These include rates and ratios, direct and indirect methods, and regression analysis. The ratio of migrants to the total population will be calculated for the regions as well as the country as a whole for each census year; and the changes in this ratio from one census year to the other will be established to show trends as well as indicating how mobile the population is. The proportion of movements classified as rural-rural, rural-urban, and urban-urban will be calculated and analysed. It will be shown from this analysis that in Ghana there is a greater volume of rural-rural migration, even though rural-urban migration is also present. It may be possible to discuss the types of movements by age and sex of migrants to show that most Ghanaian migrants are young male adults.

Such a direct method as the place of birth by place of enumeration technique will be employed to estimate life-time in-migrants, life-time out-migrants, and net intercensal migration for the various regions of Ghana for the periods 1960-70 and 1970-84. Gaisie and de Graft-Johnson (1976) used this method to estimate internal migration for Ghana for the 1960-70 period, but the method is yet to be used for the 1970-84 intercensal period. The United Nations (1970:5) notes that on the basis of the response to a question on place of birth, it is possible to classify the enumerated population into two groups:

1. migrants defined as persons who were enunerated in a place different from the place where they were born;
2. non-migrants defined as persons who were enumerated in the place where they were born.

These data allow for the estimation of life-time in-migrants, life-time out-migrants, and the intercensal net migration. The place of birth method has the defect that respondents usually mention the nearest town to their locality of birth as their place of birth. The problem is actually eradicated by using administrative regions, as the reported town and the exact place of birth are very likely to be situated in the same region.

Even though several indirect methods are available for the estimation of internal migration, the type of data available permits the use of only three methods in this dissertation. These are the life table survival ratio method, the census survival ratio technique, and the simultaneous application of the life table and the census survival ratio methods. These will provide various estimates of internal migration for the administrative regions of Ghana. In the first technique, appropriate survival ratios from an applicable life table to Ghana are selected, and then applied to age-sex distribution of the population at the first census. The difference between the population, thus obtained, and the enumerated population at the second census is attributed to migration. The life table survival ratio technique has the demerit of assuming that national mortality level is the same as mortality level for each region. It assumes, further, that mortality level, as presented in the qx values, is the same throughout the period, but these assumptions may not necessarily be true.

In the census survival ratio method, forward census survival rates are first computed for each intercensal period, i.e., 1960-70, and 1970-84. The survival ratios obtained for the country as a whole are then applied to the enumerated population for the regions at the first census. The difference between the population, thus obtained, and the enumerated population at the second census is again attributed to migration. Reverse census survival method, which involves surviving the population of the second census to the first census, is also employed. A simple mean of the forward and reverse census survival ratio results is taken as the net migration estimate. This is necessary because of the problems inherent in the two approaches and the data. The forward census survival method assumes that migration occurred at the beginning of the period, ie the date of the first census, while the reverse census method implies implies migration occurred at the end of the period. It is evident from empirical studies that migration does not occur at the beginning or end of the period, and that it is also not evenly distributed throughout the intercensal period. By taking a simple mean, the problem can be minimised. In the third indirect method, both life table and census survival ratios are applied simultaneously to the enumerated population of the first census to obtain two sets of projected populations for the second census. The difference between the two sets of population is then attributed to net migration.

In addition, simple and multiple regression procedures will be used. Since the study is intended to test the push-pull theory, the dissertation will use a model in which migration is a function of the characteristics of the regions of origin and destination, conditioned by time. A number of models are available in the literature. Lowry (1966), Rogers (1968), Todaro (1969 and 1976) and Schwind (1971), for example, propose a number of multivariate models which may be used to study internal migration. These researchers interpret internal migration in developing countries as a function of employment opportunities, income and wage differentials in the areas of origin and destination. They provide models which show that migrants will move to the regions where employment is more available or at least seen to exist, and where income and wages are higher than at the area of origin. In his initial formulation, Todaro emphasised economic factors as explaining the direction and volume of internal migration.

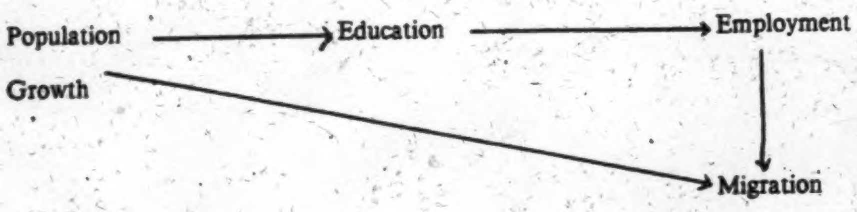
Other researchers have stressed such social amenities as education and health centres (see, for example, Caldwell, 1969; and Preston, 1979). According to Shaw (1975:75), education is treated as an amenity variable and a motivational influence. He explains that the presence of schools in a region indicates that the region is dynamic, culturally stimulating, and that migrants may be attracted to the region to further their education. Also, once a certain level of education is attained, people who have acquired a prescribed level of skills associated with the level of education completed may move to areas where appropriate employment exists. Thus education is seen to affect net migration directly, and indirectly through employment.

The following multivariate model which borrows in part from the existing studies in the literature is proposed to study internal migration in Ghana.

Mij = F(Demographic, Social, and Economic Factors),

where Mij is net migration from region i to region j, demographic factors are represented by population growth, social factors are represented by education and specifically the number of elementary schools per 100,000 population aged 5-14 years; and economic factors by the economic activity rate or labour force participation rate. Time and region are not by themselves causal factors of internal migration, and are, thus, excluded from the model itself. Each of the variables in the model has a time dimension as the variables are dynamic and change with time.

The model may also reflect a sense of theoretical linkages as follows:



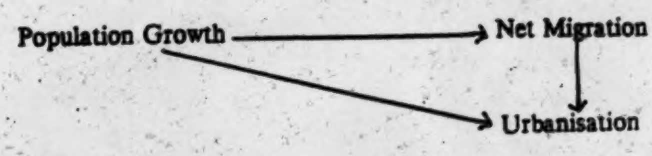
Here the causal effect is that areas with higher population density will have more schools, and more schools reflect in the economic activity or the labour force participation rate of the population, which in turn influences migration. In other words, migrants move to areas with more schools and job openings to avail themselves of those good opportunities. In Ghana, elementary schools are provided on the basis of the regional population. This is to ensure the attainment of universal primary education which was started in 1951; so that the higher the population, the larger the number of schools. It follows further that the larger the number of schools, the larger the number of school graduates who might have aquired some minimum skills for employment. As most of the jobs they want are in the cities and more developed regions, they move to those places and, in the process, migration occurs. As explained earlier, there is theoretical and empirical evidence to support this contention (see, for example, Todaro, 1976; Segal, 1972; and Caldwell, 1969). In addition, Preston (1979:211) notes that there are migrants in developing countries who move specifically to acquire more education, even though the proportion of this category of migrants is rather small.

Finally, it must be pointed out that several other methods are available but, as noted by Hance(1970:128), many of them are not readily applied in Africa. For example, the use of balancing equation for the estimation of migration is very rarely used in Africa primarily because of the lack of adequate vital registration data. For the same reason and also due to the lack of age data on migrants over time, Roger's methodology of estimating internal migration cannot be used fully in Ghana. Despite this assertion, an attempt is made to use the balancing equation technique to estimate internal migration. As explained later, the vital statistics used are mainly estimates based on the literature and the author's knowledge of the Ghanaian society.

Three ways of studying urbanisation as a process will be used --the number of settlements, the size of settlements, and the proportion of total population classified as urban. The number of settlements classified as urban for each census year will be identified, and the number of such urban settlements for each region as a percentage of the urban settlements in the country will be calculated. The percentage change in the number of settlements from one census year to the other will be presented. Similar analysis will be done for the size of settlements. In Ghana, settlements of 5000 or more people are classified as urban, and a study of urban settlements by sizes, i.e, 5000, 50,000, 100,000, 500,000, and over 500,000 will be made. A rank-size distribution of the ten largest towns in 1960, 1970, and 1984 will be presented. Absolute and relative changes in the population of the main cities, as well as the changes in the number of settlements falling within the above population categories for each region and census year will be analysed. It is possible to ascertain from these analysis if the main cities are expanding, and if urbanisation is more rapid in some regions than others. This type of analysis will also indicate the rate at which newer urban settlements develop, and establish the regions in which cities and other urban centres tend to concentrate.

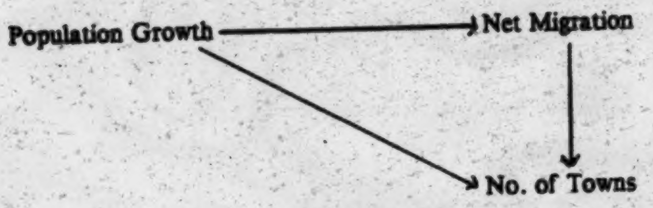
A demographic study of urbanisation in Ghana will not be complete, unless a meaningful analysis of the proportion of total population classified as urban is included. Urban proportion will be computed for the census dates for the country as a whole, and for the regions. Absolute and relative changes in these proportions will be presented, while linear extrapolation of these will be made under various assumptions to obtain future urban proportions, and thus estimates of future urban population in Ghana.

The following multivariate regression model will be used to study urbanisation, which is defined here as the proportion of the population classified as urban.



There is no question about the fact that population growth is an essential factor in urban development. As noted by Hauser (1960:98), the explosive growth of urban and metropolitan population is, in part, the result of the explosive total population growth. Hauser and Schnore (1965:1) assert, further, that 'population size is necessarily a factor in urban development because to permit any agglomeration of human beings, there must be a minimum number to sustain group life'. Also, high poulation growth means increasing propensity to migrate, as explained earlier; and as they move to the cities and urban centres urbanisation increases. This model will, as a matter of fact, examine the effects of population growth and net migration on urbanisation.

The dissertation will also examine the development of new towns in the regions. Two models which are similar to the urbanisation model are proposed:



This will help explain the growing number of towns in the regions, as the number of towns has been increasing since 1960. The second model is the same as the first except that urbanisation replaces population growth.

IV. Chapter Four: Major Theoretical Perspective on Migration

The great diversity of human movements has resulted in the development of a large number of theories which are varied in many respects. A glance at the literature reveals a mass of diversified and multi-faceted theories on the process of internal migration. A review of all the existing paradigms in the literature falls beyond the scope of this chapter; however, an attempt is made at identifying and discussing the major theories. The theories of migration may be classified broadly as theories of intervening opportunities, gravity and economic models, mobility transition theory (which equates phases in the migration process to the phases in the demographic transition theory), behavioural and psychological theories. Ravenstein's laws of migration are treated separately because of their unique importance as the starting point in the development of migration theory. An attempt is also made to discuss migration typology.

A. Typology

The need for a typology of migration cannot be overemphasised. The great diversity of migration processes, causes, and consequences makes it necessary to develop migration typologies. This is required to streamline the various classifications of migration in the literature. In particular, there is a need to examine migration to identify some of the weaknesses in the existing typologies, and to suggest possible ways of overcoming these weaknesses.

B. Typology of Fairchild

One of the oldest existing migration typologies is found in Fairchild (1925). The criteria used in that typology include the role of culture. Fairchild distinguishes migration from low culture to high culture, peaceful movements, and warlike movements. Examples of peaceful movements as presented by Fairchild are colonization and immigration, while he lists invasion and conquest as warlike movements (table 1).

Table 1. Fairchild's Typology

Migration From	Migration To	Peaceful Movements	Warlike Movements
Low Culture	High Culture		Invasion
High Culture	Low Culture	Colonization	Conquest
Cultures on a level		Immigration	

Source: Kosinski and Prothero (1975:7)

The greatest weakness of this typology is that it is oversimplified, and there are several aspects of migration which are missing. Besides his classification of colonization as a peaceful movement may not be completely true; colonization has taken the form of wars and conquest, a classic example being the Sagrenti war of 1874 which brought the Ashanti Region of Ghana under British colonial rule. In addition, Fairchild's typology is out of date.

C. Typology of Petersen

The most popular typology in the literature is the one proposed by Petersen in 1958. He provides a detailed typology in which he examines the type of interaction which results in migration, the migratory force involved, as well as the class and type of migration. He distinguishes mainly two types of migration, namely conservative and innovative.

With regards to types of interaction, he distinguishes between nature and man, state and man, man and his norms, and collective behavior. The migratory force for each type of interaction is also provided: for nature and man, he identifies ecological push, for state and man, the force is migration policy, while for man and his norms, the force is higher aspirations. Despite the fact that this typology is well known, it should be noted that it has shortcomings. The first weakness is that the time dimension of migration is neither mentioned nor explored. There is no implicit or explicit inclusion of the relation between time and migration. In addition, the interaction between man and man is omitted; so also is the interaction between man and development. Man and man interaction has resulted in various forms of migration--voluntary and involuntary, while developments of various kinds have influenced the intensity and direction of both internal and international migration. Other important attributes of migration which are missing include distance, and duration. So that it is possible to improve upon Petersen 's typology by including the time dimension, the interaction between man and man, man and development, distance, and duration.

In fact, Krishnan and Odynak (1988) illustrate Petersen's typology and discuss the four migratory forces outlined by Petersen. They assert among other things that at the time of migration, a number of socio-psychological and decision-making processes have already taken place, and that migrants go through many of those processes before the step to move is taken. They consider primitive, impelled and forced migration as well as free and mass migration; they identify the U-type which is basically Petersen's flight from the land, S-type/ of D-type in impelled migration. They point out that a migrant in the innovative category may move upward in innovation, ie U-type; he may be stationary (S-type) or he may move downward (D-type). Under forced migration, they disagree with Petersen's classification of slave trade as innovating and the present study also disagrees as slaves were forced to move and as they worked mainly on the land. Under free migration, they show that human aspirations entice people to move to areas where they seek better living standards, while mass migration, they argue, is a result of a momentum created by collective behaviour.

D. A Typology of African Migration

The need to clarify the complexity of space and time in African migration led to the presentation of a typology of African migration by Gould and Prothero (1975). The essential point in this typology is that it identifies the basic geographical components of individual movements and makes it possible for these to be related to and compared with one another. According to this typology, space may be considered in terms of distance and/or direction.

Distance has been defined here to include geographical, social and economic distance. They discuss short distance movements between settlements and within settlements, and point out that the conventional distinction between international and internal migration in Africa is not appropriate where people living on both sides of international boundaries have common linguistic and cultural background. Examples of this include residents of the Volta Region of Ghana and the Republic of Togo, who are largely Ewes and have common norms, values, and language. In fact most of the people residing on both sides of international boundaries in Africa have been separated by colonization and that they have homes and relations on both sides of the border. In terms of direction, the typology considers space in four categories, namely rural-rural, rural-urban, urban-urban, urban-rural.

Similarly, the temporal dimensions of migration are considered in a number of ways. Three main categories are specifically discussed: these are movements which occurred in the past but which occur no longer, movements which have continued from the past to the present, and movements which have developed in recent times. Finally on the basis of the four categories of migration involving rural-urban classification, Gould and Prothero (1975) present a typology the components of which include space, time, and a proportion of people involved in the other types of migration has increased tremendously with the improvements in transportation.

Yet another component of the temporal aspects of migration which is considered in this typology is the duration of stay. Given that most rural-rural migrants engage in short distance travel to find suitable land for shifting-field cultivation, it may be appropriate to conclude that such movements are mainly of short duration, as farmers abandon their farms after short stay. Long distance migration is, therefore, likely to be of long duration, ie permanent or semi-permanent (table 2).

2. A Typology of Migration for Ghana

Distance	Type of Migration	Direction	Time Dimension	
			Historical	Duration
short	rural-rural	varied but mainly north-south	past and present	Varied but mainly short
Long	urban-urban rural-urban urban-rural	Mainly north-south	past and present	Long and permanent

E. Ravensteins Laws of Migration

Ravenstein (1885) proposed the followings laws:

(1) Distance:

(a)The great body of our migrants only proceed a short distance and migrants enumerated in a certain centre of absorption will.... grow less (as distance from the center increases)

(b) Migrants proceeding long distances generally go by preference to one of the great centers of commerce and industry

(2) Migration by stages:

(a)'There takes place consequently a universal shifting or displacement of the population, which produces "currents of migration", setting in the direction of the great centers of commerce and industry which absorb the migrants'

(b) 'The inhabitants of the country immediately surrounding a town of rapid growth flock into it; the gaps thus left in the rural population are filled up by migrants from more remote districts, until the attruactive force of one of our rapidly growing cities makes its influence felt,step by step,to the most remote corner of the kingdom

(c) 'The process of dispersion is the inverse of that of absorption, and exhibits similar features

(3) Stream and counterstream: 'Each main current of migration produces a compensating counter-current' In modern terminology, stream and counterstream have been substituted for Ravenstein's current and counter-current.

(4) Urban-rural differences in propensity to migrate: "The natives of towns are less migratory than those of the rural parts of the country"

(5) Predominance of females among short-distance migrants: "Females appear to predominate among short-journey migrants"

(6) Technology and migration: "Does migration increase? I believe so.... Wherever I was able to make a comparison I found an increase in the means of locomotion and a development of manufacturers and commerce have led to an increase of migration"

(7) Dominance of the economic motive: "Bad or oppressive laws, heavy taxation, an unattractive climate, uncongenial social surroundings, even compulsion (slave trade, transportation), all have produced and are still producing currents of migration, but none of these currents can compare in volume with that which arises from the desire inherent in most men to "better" themselves in material respects"

These laws formed the basis of later theoretical developments in migration research.

F. Model of Intervening Opportunities

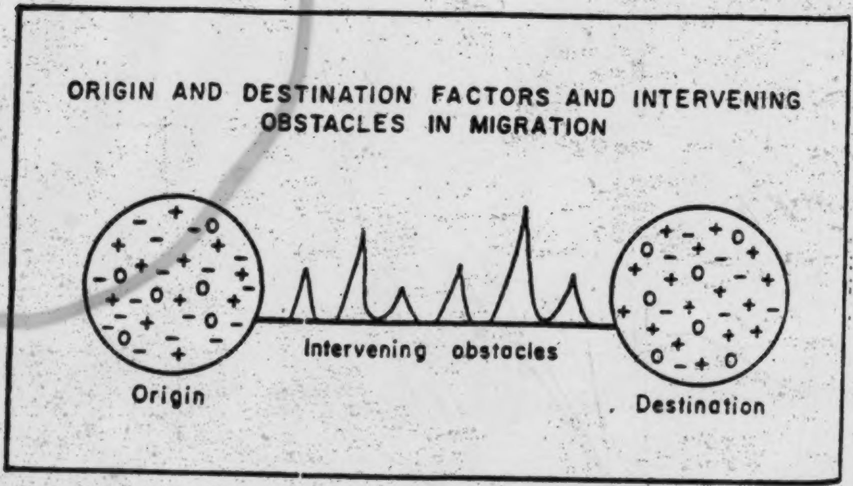
This was proposed by Stouffer and according to Lee (1966:49), it is perhaps the best known of the recent theories of internal migration. The model of intervening opportunities denies that there is any necessary relation between mobility and distance. Stouffer hypothesizes that the number of persons migrating a given distance is directly proportional to the number of opportunities at the place of destination and indirectly proportional to the number of intervening opportunities (U. N., 1973:210).

Lee's theory is similar to the theory of intervening opportunities, since both theories emphasise opportunities at area of destination. Lee (1966) postulates that the factors which influence migration may be classified under four headings namely factors associated with the area of origin, factors associated with the area of destination, intervening obstacles, and personal factors (fig 7). He argues that there are certain factors which encourage people to move, and others which hinder and/or discourage people from moving. He classifies the former group of factors positive and the latter negative. In the area of origin, positive factors are those which push out people, while in the area of destination positive factors are those which attract people. The negative factors in the area of origin are those which encourage would be migrants to stay, while in the area of destination, negative factors are those which discourage would be migrants from coming. The intervening obstacles include such factors as topography, forest, disease, hostile people and related factors which may impede the smooth movement of the migrant from the area of origin to the area of destination. Lee (1966:50) notes that aside these positive and negative factors, 'there are others, shown as Os, to which people are essentially indifferent'. All these factors affect people differently; for example a fetile land may be favourable to the farmer, while the non-farmer may find it unfavourable. Also a factor which is trivial to one migrant may be essential to the other. Like many other theories, the migration theories of Lee and Stouffer do not consider the diverse circumstances under which people move, and they also fail to inlude psychological motives of migration.

G. Gravity Models

It was in the Zipf model, sometimes called the P1P2/D hypothesis, that the underlying principle of the gravity model was initially developed. Zipf and Kant postulate that the volume of migration is directly proportional to the product of the populations of the places of origin and destination, and inversely proportional to the distance between them. The gravity model, in essence, treats human migration as a form of 'social physics' with the migrant or

Fig 7 Lee's Theory


ORIGIN AND DESTINATION FACTORS AND INTERVENING OBSTACLES IN MIGRATION
Intervening obstacles
Origin
Destination

Origin

Positive Factors	Negative Factors
unemployment	employment
Less pressure on land	more pressure on land
low wages	high wages

Destination

Positive Factors	Negative Factors
high employment	unemployment
high wages	low wages

Source: Lee (1966:50)

non-migrant responding to the strength of gravity-like pulls and pushes as well as inertia (Zelinsky, 1971:167). It contains similar ideas as Lee's theory of migration. The gravity model points out that there are certain factors which tend to push out people from the area of origin, and some other factors which tend to attract or pull people to the area of destination. Such economic opportunities as availability of employment, better remuneration, and social factors as the presence of educational opportunities constitute powerful forces driving the migration stream (see, for example, Todaro, 1976).

In the gravity models, distance, as expressed in physical and/or cost terms, appears as the principal deterrent. This group of models is applicable to both internal and international migration. The urban way of life together with educational and job opportunities in urban areas tend to attract rural folks to migrate, for example; while, at the international level, better economic opportunities in some countries may attract people from other countries. The gravity models have some empirical support in the literature. Evidence from the phenomenal rural-urban migration in developing countries indicate that rural-urban migrants are repelled by some factors in the areas of origin and attracted by some other conditions in the the area of destination as shown by Caldwell (1969).

The shortcomings of the gravity models of migration include the idea that it works poorly at the micro level. The individual's decision to migrate is not only influenced by forces of attraction and repulsion as indicated in the gravity models, but also by a host of psychological and socio-cultural factors (see, for example, Wolpert, 1965). Zelinsky (1979) also points out that the gravity models offer diminishing insight into long distance migration occurring in the advanced nations during the past decade. The concept of the urban turn-around is neither explained nor mentioned in the gravity models. It has also been pointed that the model under discussion fails to account for either the initial or terminal state of the system (Zelinsky, 1979). This means that the gravity models do not indicate the stages in the migration process; in particular they do not define when the process begins and when it ends as portrayed by the mobility transition theory.

H. Economic Models

This major classification of migration models offer economic reasons as motivating factors in the migration decision-making process. Proponents of this school (Todaro, 1976; Webber, 1963 cited in U N, 1973:209) argue that people move simply for economic reasons. In a sense, the economic models are similar to the gravity models since they all imply that people move to the area of destination to avail themselves of better economic opportunities including good jobs and better wages and salaries. Indeed, most rural-urban migrants in Ghana move to Accra and the other cities mainly for better jobs and good wages as urban-rural wage differential is large (Caldwell, 1969).

Steel (1961:265) observes: 'another magnet which draws Africans to the towns is the prospect of paid employment offered by urban areas..'. He further points out that industrial development is largely responsible for the movement of people to the towns of Africa. Implicit in the economic models is the cost-benefit explanation for migration. Todaro (1976:28) argues that migration, for the individual migrant, is based primarily on his rationale economic calculation of the gains and losses involved. Despite the ample evidence of support in the literature, the economic models have the defect of failing to provide adequate and precise explanation of the individual's decision to move, as it does not consider the social and psychological factors in the migration decision-making process.

Lowry (1966) proposes a model in which migration is a function of income, employment/unemployment and occupation. The emphasis is on the differentials in these indicators in the area of origin and the area of destination. Lowry's model takes the form:

$$Mij = K\ Ui/Uj.\ Wi/Wj.\ LiLj/Dij\ .\ x\ eij$$

where Mij is the number of migrants from i to j, LiLj are the number of people in non-agricultural labour force at i and j respectively, Ui, Uj are unemployment as a percentage of the civilian non-agricultural labour force at i and j, Wi, Wj are the hourly manufacturing wage rates at i and j, Dij is the distance from i to j, and eij is the error term.

The problem with Lowry's model is that the data may not be readily available for it to be applied in many developing countries.

I. The Hypothesis of Mobility Transition

This theory, proposed by Zelinsky (1971), attempts to extend the provisions and theme of the traditional demographic transition theory to migration and other forms of human mobility in the realms of sociology and economics. It may be noted that Zachariah (1969) had come up with this idea earlier. Zelinsky calls the demographic transition theory 'vital transition theory' because it embodies only fertility and mortality. The theory of mobility transition, as stated in 1971, embodies the following idea: 'there are definite, patterned regularities in the growth of personal mobility through space-time during recent history, and these regularities comprise an essential component of the modernisation process' (Zelinsky, 1971:221-222). In addition, he offers eight related statements which, taken together, clarify the theory. Zelinsky (1971:222) states that

1. a transition from a relatively sessile condition of severely limited physical and social movements towards much higher rates of such movements always occurs as a community experiences the process of modernisation;

2. for any specific community the course of the mobility transition closely parallels that of the demographic transition and that of other transitional sequences not yet adequately described

3. there are major orderly changes in the form as well as in the intensity of spatial mobility at various stages of the transition. Changes in function, frequency, duration, periodicity, distance, routing, categories of migrants, etc.;

4. there are concurrent changes in both form and intensity of social mobility and in the movements of information;

5. at a fairly high level of generalisation, which dampens out minor spatial and temporal irregularities, we can recognise in mobility conditions coherent patterns that propagate themselves onward through time as successive periods and outward through space as

concentric zones emanating from successive growth points;

6. the processes in question tend to accelerate in spatial and temporal pace with time;

7. the basic spatiotemporal scenario of change may be preserved, yet be noticeably modified when a region initiates its mobility transition at a late date, so that absolute dating is a significant consideration;

8. the stages are irreversible.

Thus, the emphasis in the mobility transition theory is on mobility which covers all forms of movements in physical space irrespective of distance covered and time taken, and includes commuting and permanent change of residence etc.

Five phases corresponding to stages in the vital transition theory are discernible in Zelinsky's theory. Phase 1 is the premodern traditional society and is characterised by little migration and such limited circulation as is sanctioned by customary practice in land utilisaton, etc. Phase 2 is the early transitional society; the salient characteristics include a massive increase in most forms of migration and especially in movements from countryside to cities, major outflows of emigrants to available and attractive foreign destinations. In the third phase, the late transition stage, there occurs a decline in the movements in phase 2, except circulation which increases. More advanced developing societies like Brazil fit into this phase which lies some where between the more developed and less developed countries. Phase 4 is what Zelinsky (1971:230) calls advanced society and covers the more developed countries. The characteristics of this phase include a reduction in the movement from countryside to cities, increase in urban-urban migration, leveling off of residential mobility, accelerating circulation, and net immigration of skilled and semi-skilled from underdeveloped areas. Phase 5 is the last phase and is called the future super-advanced society. The essential features include a decline in the level of residential migration and a deceleration in some forms of circulation resulting from improved communication systems, further immigration of unskilled labour from less developed areas, and strict political control of internal and international movements.

Subsequently, Zelinsky (1979) re-examines his mobility transition theory in the light of the evidence from the testing of the original theory in some countries like Peru, New Herbrides, Eastern Europe and so on. He also discusses the defects in the theory. Zelinsky (1979) identifies two main problems in the mobility transition theory: those problems which are peculiar to the model, and others which include difficulties inherent in virtually all attempts at social theory.

Even though the theory received some empirical support in those areas where they were tested, some departures were also noted. Zelinsky concedes that anticipating future phases of mobility is extremely difficult; it is also difficult to define a terminal state of the mobility transition theory, while the varying complexity of human mobility forms and problems of definition further complicate the issue. The political factor is also a major problem in the mobility transition theory. Fuchs and Demko (1978, cited in Zelinsky, 1979:177) point out that direct governmental intervention in the mobility process, through various control measures, has resulted in the earlier introduction of phase 5 in Eastern European countries. In the Soviet Union, for example, it is the government's prerogative to decide where people should live and people cannot move freely from one part of the country to the other, as and when they like. Fuchs and Demko show further that the mobility transition theory fails to treat explicitly the factors that cause mobility change, a defect which is also true of all the major theories of internal migration. Besides, like the other theories of internal migration, the mobility transition theory does not accommodate mobility characteristics and consequences which may be socially more important than the five stages outlined in the theory. In many countries today, the effects of internal migration in both the areas of origin and destination are receiving much attention; out-migration has resulted in labour shortages especially farm labour in agrarian societies, sex imbalances, and marriage problems in the areas of origin, for example. In the areas of destination,some of the problems have been mass unemployment, congestion and related housing problems, insecurity and so on. Further the mobility transition model does not consider the urban turnaround taking place in many developed countries today. The point here is that even though the mobility transition theory has a finite stage, no where in the five stages does the theory discuss urban-rural migration.

J. Behavioral or Psychological Theories

Wolpert (1965) presents a new theory of migration which tends to emphasise behavioural aspects of human mobility. His approach is applicable to both internal and international migration. He argues that a great deal of useful information has come from the analysis of migration differentials by categories of occupation, income, race, and age. He points out that existing predictive models of migration had not been designed to include these findings nor to consider the interdependence of these characteristics in migration behaviour.

The main difference between Wolpert's theory and those of Ravenstein, Lee, and Zelinsky is that (a) Wolpert includes a lot of behavioral factors which are missing in the others; and (b) Wolpert stresses migrational differentials by race, occupation, income, and age, while only Lee discusses migration differentials by age.

Thus one of the main objects of Wolpert's paper is to 'demonstrate the potential usefulness of the migration differential approach' (Wolpert, 1965:298). In this regard, he points out that any theory of economic determinism in migration is inclined to be incomplete. As expected, Wolpert's model borrows much of its concepts and terminology from the behavioural theories. The focus is on internal migration and three central concepts are discernible: 1. The notion of place utility; 2. field theory approach to search behaviour; and 3. life cycle approach to threshold formation.

The argument in the place utility notion is that, in deciding to move, migrants tend to assess the cost and benefits of staying at their place of origin as well as the cost-benefit analysis of moving to the place of destination. The second concept postulates that migrants also tend to collect much information about the areas of origin and destination. Information, as used in Wolpert's theory, covers not only cost-benefit data, but also a host of psychological and socio-cultural information including languages, norms, religious beliefs and practices. The theme in the third concept is that human beings have their own perceived standard of living; and that, prior to migrating, individual migrants find out if this level of economic wellbeing corresponding to their stage in the life cycle is available in their locality. It is pointed out that this perceived standard of living varies with age, for example.

This model, however, fails to describe the process of migration and only discusses the causal factors of migration, leaving out also the consequences of migration.

Pryor (1981) attempts to explore the possibility of integrating some aspects of the existing theories and empirical findings in a new way. He addresses the question of integrating internal and international migration and identifies the areas where such an integration is possible. Pryor examines four types of models: gravity, cost-benefit, stochastic, and behavioral. He suggests that although the behavioral models are still underdeveloped, recent experience has seen some useful integration with cost-benefit approaches. Pryor adds two other models, namely the systems and historical nodels, the latter being based on Zelinsky's mobility transition theory. As regards the gravity models, he argues that there is a need to understand more about interaction, motivation, and consequences, not just volume and distance. Pryor (1981) also discusses the cost-benefit models, especially Todaro's model (Todaro, 1976). Todaro postulates that migration results from the somewhat logical, but difficult to prove notion, of expected rather than actual rural-urban wage differentials.

Pryor (1981) also discusses the stochastic models developed by such writers as Rogers (1978, cited in Pryor, 1981). With regards to the systems and historical models, he reviews Zelinsky's mobility transition theory and Mabogunje's application of the general systems theory concepts of elements, attributes and relationships to rural-urban migration in Africa. According to Pryor, Mabogunje's theory comprises four components in the migration environment: economic, social, technological and governmental. These interact in various ways, and with the existing conditions in the rural and urban areas to determine migration volume and direction. Pryor proposes five themes or areas where integration of internal and international migration may be considered, namely differentials or selectivity in migration, causal factors, patterns of flow, consequences of migration, and policy and human rights issue.

Other behavioural or psychological theories of internal migration are found in De Jong and Fawcett (1981), Haberkon (1981), and Taylor (1969). De Jong and Fawcett (1981) stress the importance of decision-making in migration. They provide a synthesis of findings about motivation to migrate. They conclude from the literature review that most of the writings on migration tend to emphasise the economic motives to migrate but that they all fail to find out why people do not move (see also Haberkon, 1981). It is further argued that if the decision-making approach is adopted, it is virtually inevitable that this question will be addressed (De Jong and Fawcett, 1981:43).

De Jong and Fawcett also provide a value-expectancy model which seeks to show that the decision to move is the result of seven main potential values or goals. These are wealth, status, comfort, stimulus, affiliation, autonomy, and morality. They also provide a general framework for the formulation of a good migration theory. According to this framework, a good migration theory should consider the causes, processes, as well as the consequences of migration. The causes, they argue, should include economic motives as well as behavioural and psychological considerations. De Jong and Fawcett (1981) add that a good migration theory should also address the question of why people do not move.

Haberkon (1981) also shows the importance of decision-making in migration and identifies five stages in the migration process. According to Haberkon (1981:256), stage 1 is 'appraising the challenge' and involves an examination of the risk involved in adhering to the present situation as against moving etc.; stage 2 is 'surveying alternatives while stage 3 is weighing alternatives'; during stages 2 and 3, the would be migrant finds out the places he could move to and assesses the merits and demerits of such a move. Stage 4 is 'deliberating about commitment during which time the migrant tries to collect some information. The final stage is what Haberkon calls 'adhering despite negative feedback'. At this stage, the migrant has received much data on his decision, especially negative information but still decides to move.

K. Quantitative Models of Internal Migration

This review of internal migration theories will not be complete unless mention is made of the mathematical and statistical models of internal migration. These are, essentially, not different from the models which have already been discussed in this paper. A glance at these theories reveals that they are merely attempts to quantify some of the theoretical models already discussed in this paper (see, for example, Shaw, 1975:47). The models fall under one of gravity, cost-benefit and the other models, and constitute quantitative representations of these models.

L. Other Relevant Works

The Food and Agricultural Organisation (1978) also attempts to integrate internal migration in rural development, especially rural agricultural development. The Organisation uses the existing theories to present a theoretical framework for studies in migration and rural development.

Kosinski and Prothero (1975:1-15) also discuss the concept of migration (internal and international), covering such topics as typology of migration, patterns, causes, and consequences of migration as well as the laws of migration. They review the various laws of migration and examine Ravenstein's laws of 1885-1889, the theories of Lee (1966), and Zelinsky (1971), for example. Kosinski and Prothero (1975:11) note that a different approach has been presented by Mangalam. Mangalam (1968 cited in Kosinski and Prothero, 1975:11) discusses a social organisation theory of migration, and postulates that each society experiences changes in culture, social and personality systems during its history, and that these changes in turn influence internal migration in that society. It should also be noted that even though they do not formulate a theory of their own, Kosinski and Prothero (1975) summarise the works in the area of migration theories and enhance our understanding of the said laws and theories and how they operate, by drawing upon empirical evidence from the works of several writers.

Finally, Zelinsky (1983) examines the impasse in migration theory and offers seven explanatory strategies for migration. These strategies, which are discernible from the existing literature, are the general empirical, economic and behavioural approaches. The others are the spatial modeling of migration, cultural, sociological, and historical approaches. From the literature review, Zelinsky (1983:33) specifies the qualities of an ideal migration theory. He provides a more meaningful definition of migration (internal and international) which considers the social-psychological definition of Mangalam as well as the more common definition involving change of residence. In brief, he postulates a theory which strives to put together the various theories in the literature and which will be so comprehensive as to cover the economic, socio-cultural, political, and psychological causes, processes, and consequences of internal and international migration.

In addition, Taylor (1969) discusses some psycho-social determinants of the propensity to migrate. Using specific case studies from Great Britain, he shows that some aspiring migrants take individual decisions, while others are influenced by spouses, brothers, friends and other relations. He presents a list of the the constituent elements of a model of migration determinants as follows: first the degree of conduciveness or strain; secondly, the individual's perception and evaluation of the strain; thirdly the presence of long and short term aspiration; fourthly, the presence of a degree of dislocation; fifthly the generalised belief that conditions are better elsewhere; sixthly the objective feasibility of migration as a project and, seventhly, the presence of precipitating factors. Accordingg to Taylor, the model has the defect of not outlining the exact procedure to be followed to study migration in the light of these seven elements.

Like most of the other theories, it is still difficult to get empirical support for such a theory in both the developing and the developed worlds. This is due largely to the great variety of cultures which results in a diversity of causes, processes, and consequences of migration.

M. Migration Theory in Relation to Ghana

It is important to state at this stage that most of the available migration theories are applicable to the migration process in Ghana only to some extent. No single theory or model is applicable to Ghana in full, but that some aspects, concepts, and procedures inherent in some models or theories may be discernible in Ghana. With regards to Ravenstein's laws, it is interesting to note that while some of his assertions, such as the economic motive of migrants, have empirical support, it may be difficult to find evidence to support his view that females predominate among short distance migrants in Africa and Asia, where this view may be vitiated (see, also, U. N., 1973:209). Gaisie and de Graft-Johnson (1976) point out that the commonest type of migration in Ghana is rural-rural, normally covering short distance movements. In this sense, Ravenstein's first law may be true for Ghana. Sight should not be lost of the fact that internal migration is influenced not by the distance of the area of destination 'per se', but also by technological distance in terms of the available means of transportation. Modern forms of transportation such as automobile and aeroplanes, reduce long distance to a few hours of travel. In addition, distance should not be considered only in terms of geographical distance, but also as social distance. Social distance here refers to cultural, linguistic and religious differences between areas of origin and destination. These attributes have significant roles in the decision to migrate and, thus, the volume of migration. In Ghana where there are hundreds of dialects, technology of communication is important; in the more developed countries, cultural and linguistic information is obtained from the mass media, while in the less developed areas, technology of communication is by word-of-mouth. Ravenstein also failed to consider the historical dimensions explicitly, even though they are implied in his model. Nonetheless, Ravenstein's Laws of migration are very useful, and have become the benchmark for generalising on migration. It was a major landmark in migration studies because no such work existed before.

The push-pull theory may be applicable to Ghana where most migrants move from economically stagnant rural and less developed regions to destinations where better economic prospects prevail. It has been shown throughout the study that most migrants move to the nearest more developed region, and this means that the development projects tend to pull people to that region. As shown later in the study, employment and education were major determinants of migration in the regression analysis. In Ghana people move to the towns in search of good economic opportunities and education. These amenities then become factors of attraction pulling migrants to the towns. While the economic models may explain some patterns of internal migration in Ghana, some psychological reasons for migrating are found in Ghana. Taylor's belief that aspiring migrants are influenced by relatives is true for Ghana, where Caldwell (1969) shows that the role of the family and relatives in the area of destination is paramount.

Given that Ghana has a declining mortality and high fertility, and massive rural-rural and rural-urban migration, the country fits into phase two of Zelinsky's mobility transition theory. Increasing rural-rural and rural-urban migration taking place in Ghana today conforms to the massive increases in migration from rural to urban areas envisaged in the second phase of the mobility transition theory. Wolpert's model is also useful in the sense that the emphasis on behavioral aspects of human migration is likely to get empirical support in Ghana, while the theory of migration differentials is also true. Indeed in Ghana, people move largely into areas where they can communicate, practice their religion and where they will not be haunted by supersitition. In the city of Accra, for example, migrants with similar linguistic and religious affiliations live in particular areas; a classic example of this is the Zongo district which is occuppied by Northerners who are mainly Moslems.

It is absolutely clear from this review that all the internal migration theories suffer from one or more shortcomings. Aside De Jong and Fawcett (1981) and Haberkon (1981), most of the theories do not consider why people do not move, for example. The position taken in this study is that it is extremely difficult to find a theory in the literature comprehensive enough to cover all aspects of internal migration, and be applicable to all areas. Movements from urban to rural areas, and rural to rural areas have received little attention in the literature. Yet, Africa is predominantly rural and recent empirical studies indicate that the bulk of the migration is of the rural-rural type in Cameroon, Nigeria and other parts of Africa (Gwan 1976, and Udo 1975).

This may also be true for other developing countries. Thus, even though one may identify similarities, regularities, and partial recurrences of human migration phenomena among diferent communities, sharp differences are discernible. This makes it difficult to get empirical support for generalisations; this is because human behaviour, as indicated in the literature, is dependent on time, place, and culture. In other words the pattern of internal migration of any group of people depends on their generation in history, area of residence, and socio-cultural practices. The paper asserts that in as much as variations exist among the world's people in terms of place of habitation, socio-cultural practices, and political systems, difficulties will be encountered in any attempt to formulate a theory which will be universally applicable to all people and to all areas. Thus, while some aspects of the various migration theories have relevance for Ghana, many aspects of the said theories do not help to explain the migration process in Ghana. This review of migration theory and its applicability in Ghana also allowed for the formulation of a theoretical framework for the study of migration which is presented later in this study.

N. Empirical Studies in Ghana

Little literature is available on internal migration in Ghana. Acquah (1950) studies the population of Accra, the capital city of Ghana. She asserts that the strugle for independence resulted in the influx of people of different ages, professions, and ambitions to the city, indicating a very mixed population. Her findings have little relevance today as the study was made four decades ago and as independence brought in a new wake of population movements.

United Nations (1984) examines the process of internal migration in various parts of the world and identifies the factors which determine the direction and volume of internal migration. It discusses Ghana briefly and refers to the findings of Caldwell (1969) on movements to Ghanaian towns. The United Nations stresses the role of the family in the migration process, and points out that remittances, family ties, education, and employment opportunities are major determinants of internal migration in Ghana. Remittances occurs when a migrant sends back some of his earnings to relatives and friends in the village or area of origin.

United Nations (1979) examines attempts at population policy in Ghana. It discusses the policies related to internal migration under each of the first four post independence governments. The policy of the Nkrumah regime (1957-66) was to encourage a substantial shift of the labour force from rural to the urban sectors. There was no visible policy to prevent the further development of Accra as a primate city, although the location of industries within regional and smaller urban centres was planned and implemented (UN , 1979:20).

During the terms of office of the National Liberation Council (1966-69) and the Progress Party (1969-72), policy with regards to population redistribution was to reduce rural-urban migration. According to the U N (1979:33), this was to be achieved by an 'equitable regional distribution of income, and in the long term, by comprehensive rural development'. Regional industrialisation strategy, involving small and medium scale industries, was also proposed. In addition, the government's population policy statement of March 1969 emphasised the government's intention to establish programs which would influence the flow of internal migration and determine population redistribution.

Under the Acheampong regime of 1972-76, there was a shift of emphasis to technological and organisational measures designed in aggregate to reduce differential developments among regions, as a means of overcoming the problems of spatial distribution of population. As part of this program, a regional development strategy was designed to ensure fair income to rural population and agricultural inputs were made readily available to rural people under the Operation Feed Yourself Program, along with a decentralisation of administration. In April 1974, a new system of education was introduced aimed at reducing the emphasis on white collar jobs, which tended to encourage rural-urban migration.

Since 1976, there has been no major change in Ghana's internal migration policy. At the 1984 Ghana population conference and the 1984 world population conference, the government re-iterated the determination to divert and restrain the movement to more developed regions. This was to be achieved through the equitable distribution of development projects among the regions, and a regular supply of subsidized agricultural inputs to farmers of less developed regions.

One of of the most extensive and intensive studies of internal migration in Ghana is found in Caldwell (1969). From the results of his empirical study of internal migration in Ghana in 1960, he examines the nature, the process, the determinants, and the consequences of rural to urban migration. The survey covered a total of 16,943 persons in 2367 households in both rural and urban areas. Regarding the nature of rural-urban migration, he shows that the proportion of the people of Ghana living in cities of 100,000 or more inhabitants almost doubled between 1948 and 1960. The urban population during the same period was growing at over 10 %, as compared with 3 % for the rural population. He finds that in the three main cities of Accra, Kumasi, and Sekondi-Takoradi, less than half the population had been born in the locality (see, also, Caldwell 1968). In fact these findings portray the intensity of rural-urban migration at that time.

Among the determinants of internal migration, he identifies five main characteristics; biological factors such as sex and age; factors related to education, family structure, chain migration, and economic condition. Caldwell also affirms the importance of distance. These factors create rural pushes and urban pulls. Economic deprivation, and lack of employment and educational opportunities constitute rural pushes, while the availability of these in the urban areas create urban pulls. He points out further that the decision to move is made by the family, while remittances to family members left behind tends to make families favour migration. The point is that so long as they will be getting part of the migrant's earnings as remittances, family elders and siblings will encourage migrants to move. The desire to enjoy city life was not as important a reason for migrating as has been postulated elsewhere in the literature on internal migration. In addition, a common response in the survey to the question on why a person remained in the village was that he had no education, and, to a lesser degree, that the respondent was more committed to the land. Education influences migration in that the more educated a person is, the higher his propensity to move. This is because the colonial education Ghana inherited after independence alienates people from the land and prepares them for white collar jobs in the cities. It should be noted that Caldwell's study was done in 1960 and may be out of date now.

Hance (1970) examines population distribution, migration, and urbanisation in Africa. He discusses internal migration, and provides evidence that shows the greater significance of economically motivated movements and the importance of individual migration, rather than group movements. Using data from several African countries, including Ghana, he discusses the socio-cultural and related factors which influence both internal and international migration in Africa. He studies such factors as religion, tribe, and modernisation and shows how these factors influence population distribution and migration in Africa. According to Hance (1970:177), 'the tribal system links together kinship relations, cultivation rights, religious beliefs, allegiance to the chief, and many other features in a single system so that each element is inextricably involved in every other'. Hance further discusses urbanisation and points to the growing number and size of cities in Ghana. He concludes that the problems facing Ghanaian and other African cities are intense, complex, and probably growing in seriousness (see also, Zachariah and Conde, 1981).

Engmann (1972) discusses some of the effects of population movements in Ghana. He shows that the development of cocoa and timber industries in Brong Ahafo, Ashanti and other parts of the country had to await the influx of a large number of immigrants. For example, he points out that in 1948, the Northern region lost to all parts of the country and that this region lost 65,000 to the Ashanti region alone. Engmann (1972:174) shows that Southern Ghana and Ashanti-Brong Ahafo gained 125,600 and 76,500 respectively, in contrast to the losses of 155,000 and 46,600 by the North and Togoland (Volta) respectively. He discusses the problems and prospects of internal migration, and talks about the native population of the country contrasting them with the immigrant labour from neighbouring countries. It is of absolute importance to note that Engmann's work was for the period 1948-60 and may not have much relevance today, as independence was accompanied by a new form and pattern of internal migration (see also, Addo 1972).

Zachariah and Conde (1981) study internal migration in West Africa. They examine the causal factors as well as the consequences of the various forms of internal migration. Four types of internal movements in West Africa are presented, namely rural-rural, rural-urban, urban-rural, and urban-urban. Emphasis is put on the importance of rural-urban migration and its effects on urban population growth. They discuss such economic and social factors as employment and education as essential reasons for migration. The argument is that migrants will move so long as they expect to get better jobs, higher wages and salaries, and generally improved conditions of service. Like Caldwell, they also stress the role of education in stimulating people to move. Ghana is identified as one of the few African countries where education is widespread; it is argued that many Ghanaians move either because they want to further their education or that they have received some education which makes them move to look for white collar jobs in the urban centres.

Segal (1972) discusses the causes of internal migration in Africa and asserts that the majority of migrants are attracted to the city by the hope for better education and paid employment. In the village the main occupation is agriculture, mainly farming. This type of occupation does not normally provide wages and salaries, as farms are communally owned by the members of the extended family, tribe or clan. The main reward is meeting of food requirements and rather little cash, if any. Farmers are not wage earners and are, therefore, not on fixed income. The main benefit from their economic activity is that they are able to provide their food requirement from their farm. As most of the farms are small scale, only little money comes in from the sale of surplus food. Segal shows, further, that most graduates from village schools find it difficult to accept this life style and hence, decide to move to the city. Segal (1972:278) points out that 'a few are lucky and find the things they expect; many do not, but either way it is only a very small percentage who return to the rural areas'.

According to Kuper (1965:17) migration in West Africa is not haphazard; routes are defined and behaviour formalized. She traces the history of migration in West Africa concluding that migration resulting from economic pressures and struggle for political power is part of the history of most African peoples. Various causal factors are presented:

education, search for jobs, political power, such socio-cultural factors as language and religion, as well as psychological satisfaction. In particular, she presents an analytical study of the role of migrant labour in the migration process. It is argued that the typical migration stream comprises migrant workers seeking better jobs in the city or urban centre.

In addition, urbanisation is discussed in some detail; she points out that some of Africa's leading towns were political capitals of past empires, indicating that towns like Kumasi in Ghana have existed for centuries. She argues that even though the historical and cultural traditions for urbanisation have existed for centuries, the reasons for the location and growth of large towns are complex. Most African towns have coastal locations, and have become attractive to rural people for both economic and social reasons. She rightly points out that West African cities have characteristics that are derived from both indigenous and colonial cultures and policies. Some general European characteristics, she notes, have been built into the newer and larger West African centres, and that few of the older African towns, with residential, commercial, and manufacturing functions mixed together in the same area, are gradually being rebuilt with separate zones for each of these functions.

Goldscheider (1971) uses African migration experience to portray the relationship between socio-economic modernisation and migration. His study transcends causes and consequences of internal migration, and includes the effects that colonialism in Africa, and industrialisation in other areas have on types and patterns of migration as well as direction of movement.

According to Goldscheider (1971), the precolonial period in Ghana was characterised by relative stability, and that the little movements which took place were of short distance and over relatively homogeneous areas. He points out that colonisation increased the intensity of migration with increased volume and coverage of large and distant areas. The colonial period saw the establishment of mines and industrial concerns which required labour. This resulted in educated and semi-skilled people moving to take advantage of these new opportunities. Goldscheider reaffirms the general rule that the shorter the distance the greater the likelihood of migration in Africa; he argues that this reflects the greater cost of transportation as distance increases, the greater degree of isolation from relatives in towns with longer distance, as well as the lower rate of diffusion of knowledge from towns to village (Goldscheider, 1971:200).

He also presents two other features of African migration processes which are unrelated to directionality. The first is the seasonal and temporal character of African migration, and the second is the process of chain migration. Goldscheider asserts that migration in Ghana has always had a seasonal component, even though not all migration is seasonal. Most migrants, he argues, return to the village after a while, and then come back to the urban centre. He shows that long term migration in Ghana is essentially chain migration. He asserts that males predominate among movers because of the temporariness of migration and the economic motives for migration. He notes further that young adults are heavily concentrated in the movement from less developed areas to more developed areas. Several causal factors were discussed including family ties, friends and relations, education and jobs.

Simmons, Diaz-Briquets and Laquian (1977) present an extensive review of previous research in the developing world. Concentrating on Africa, Asia and Latin America, they examine determinants of migration, characteristics of migrants, consequences of migration, and migration policy. As regards the determinants of migration, they identify three main groups of factors: These are structural factors, intervening mechanisms, and noneconomic determinants. The structural factors include the general development strategy, low agricultural productivity, and population growth. It has been argued that the development strategy instituted by the colonial powers have had a determining effect on the patterns of migration. A typical pattern is the concentration of population in mines, plantations, and rich coastal towns (see also Goldscheider, 1971). Another notable pattern is the perpetuation of regional inequalities in the provision of socio-economic infrastruture, which breeds movement of people to particular regions.

Simmons et al also point out that the low agricultural productivity in Africa create mass poverty, inadequate food suply, and soil deterioration, all of which encourage out-migration. Forde and Harvey (1969, cited in Simmons et al 1977) assert that a substantial proportion of out-migrants from rural areas seems to come from densely populated areas, even though Boserup (1965) has a contrary view. Citing evidence from Hance (1970), Ominde (1968), and Gourou (1970), Simmons et al (1977) conclude that population growth may be considered a cause of agricultural problems and out-migration. The main variable considered under intervening mechanisms is income differentials between areas of origin and destination, while the noneconomic factors include education, perception of rural and urban life, and the presence of relations in the urban areas.

The characteristics of migrants considered by Simmons et al are age, sex, skill levels among migrants to urban centres, area of origin, kinship and ethnicity. Among others, they stress the popular view that migration is age, sex, and skill selective. In addition, they study previous research on the consequences of migration in the areas of origin and destination, and the overall impact of migration on the economy and society.

O. Theoretical Bases of the Study

The hypotheses to be tested in the study have been formulated to conform to the theoretical and empirical evidence in the literature, especially Ravenstein's laws of migration. Ravenstein's laws of migration stipulate that

1 migration tends to be of short distance (Ravenstein 1885, cited in U N, 1973:209);

2 that people tend to move to distant places for commercial and economic reasons; and that that, as a result,

3 areas with socio-economic infrastructure may be major migrant receiving areas. This is explained by the fact that most of such commercial areas have socio-economic infrastructure. Ravenstein states also that for every major stream, there is a compensatory counterstream. This study attempts to show if these laws are applicable to Ghana. In addition, as the push-pull theory is to be tested, the theoretical bases of the study also lies in the gravity and economic models. In its simplest form, the gravity models indicate that certain factors in the areas of destination tend to attract people to that area, while other factors in the areas of origin tend to push out people from that area (Zelinsky, 1971:167). Todaro (1976) also

asserts that better economic conditions in the areas of destination such as good income and employment opportunities attract migrants to the areas of destination. It should be noted that Lee's theory, with its inherent push-pull phenomenon, also provides a theoretical basis. According to Lee (1966:50), migration results from four factors, namely factors of the area of origin, factors associated with the area of destination, personal factors and intervening obstacles. In Lee's theory, the factors associated with the areas of origin and destination repel and attract migrants as in the gravity models. In Ghana, as in many other developing countries, poverty and land pressures in less developed regions tend to push out people from those areas to more developed regions. In the more developed regions of Ghana, better prospects of paid employment, good educational opportunities, and better living conditions constitute major forces of attraction. This study is intended to test this view on interregional migration in Ghana. High population density results in less land for farming in rural areas. This compels the population to move to low density areas in other rural communities and to urban centres for paid employment. As the population moves to the urban centres, the level of urbanisation increases. Furthermore, United nations (1980) and Preston (1979) point out that even though natural increase is largely responsible for urban growth in developing countries, the effect of net migration on urbanisation is also significant.

In addition, Zelinsky's mobility transition theory relates to the study. Zelinsky (1971:222) stipulates that 'there are definite, patterned, regularities in the growth of personal mobility through space-time during recent history, and these regularities comprise an essential component of the modernisation process'. Five phases corresponding to the stages in the demographic transition theory are discernible in the hypothesis. Phase 1 is the premodern traditional society and is characterised by low migration and such limited circulation as is sanctioned by customary practices in land utilisation, etc. Phase 2 is the early transitional society, in which the salient characteristics include a massive increase in most forms of migration and especially in movements from less developed regions to more developed regions. This is similar to the situation in Ghana where movement from less developed regions to more developed regions is significant. This study will investigate whether more developed regions like Greater Accra receive migrants from less developed regions as Northern and Upper. Given that Ghana has a high fertility and a declining mortality, and a massive movement from less developed regions to more developed regions, it fits into this second phase of the mobility transition theory. The other three phases of Zelinsky's hypotheses do not apply to Ghana at this stage.

Caldwell (1969) shows the importance of education and other socio-economic amenities in the migration selection process in Ghana. Goldscheider (1971) asserts that the shorter the distance between the areas of origin and destination, the higher the probability of moving for the Ghanaian migrant. An attempt will be made to find out if migrants to particular regions come from adjoining regions or from distant regions. Udo (1975) shows that the commonest type of movement in Nigeria is rural-rural, and the study will ascertain if this is the case in Ghana as well. This does not mean that rural-urban migration is not significant. What it means is that for the country as a whole, a larger proportion of the migrants is involved in rural-rural migration. This should be expected in a country where 65 % of the labour force is employed in the agricultural sector, and where subsistence farming is prevalent.

Beals, Levy, and Moses (1967) carry out an extensive multivariate study of interregional migration in Ghana using the 1960 census data. Using a multiple regression model, they examine the relationship between migration and regional contrasts in education, degree of urbanisation, and cohort structure. They find a positive relationship between migration and regional levels of education and urbanisation.

As stated earlier, this study is intended to contribute to the wealth of knowledge on internal migration and urbanisation in Ghana. Its contribution is to provide internal migration and urbanisation estimates from the most recent data available, ie the 1984 census data. The point of departure of this study from the existing literature is to include in one study a typology of migration for Ghana, a review of the major theories of migration, and a provision of migration and urbanisation estimates from several methods. It is also the first time that the entropy approach to migration studies has been employed to study internal migration in Ghana, while the extension of the notion of income inequality to examine migration inequality is also-unique. In addition, sight should not be lost of the fact that several of the methods used and the analysis presented on urbanisation are being applied to the Ghanaian situation for the first time. The statistical application of the rank-size rule, the discussion on overurbanisation employing the techniques of Davis and Golden and sovani add to the contribution that this study is expected to make.

P. Hypotheses

From the introductory discussion of the importance of migration in Ghana, review of literature, aims and scope of the study, and the theoretical and empirical bases of the study, the following hypotheses will be addressed:

1. There is a strong inverse relationship between distance and internal migration.
2. The predominant type of internal migration is rural-rural.
3. There exists a strong positive relationship between socio-economic facilities and net migration.
4. A positive relationship exist between employment and net migration.
5. Net migration positively affects urbanisation.
6. Population Growth is positively related to urbanisation
7. An inverse relationship exists between population growth and net migration

In other words, the shorter the distance between any two regions, the higher the volume of migration between them. In addition, the availability of such socio-economic facilities as schools, electricity, health centres and employment in a particular region may consitute attractive forces which may pull migrants to that region. Even though rural-rural migrantion is predominant in terms of the number of migrants involved, there is evidence to suggest that rural-urban migration is largely responsible for the rapid urbanisation in Ghana, as is manifest in the fifth hypothesis.

V. Chapter Five: Patterns of Internal Migration

A. Introduction

This section presents the findings on internal migration from methods outlined in the methodology. National and regional estimates of internal migration are presented from the place of birth, census survival ratio, life table survival ratio methods, as well as entropy flows, and so on. Since census data are used, only life time in-migrants, life time out-migrants and life time net migration are provided. Seasonal migration could not be studied because the data are not appropriate for that type of study. The main determinants of internal migration are also identified from the regression analysis.

B. Types of Migration

The main types of migration found in Ghana are rural-urban, rural-rural, urban-rural, and urban-urban. Evidence from the census reports indicate that the first two are the most significant in terms of the number of people involved. The proportion of people engaged in the four types of migration in 1970 and 1984 are shown in table 3.

Table 3 Proportion of Migrants by Type of Migration, Ghana, 1970-84

Type of Migration	% of Migrants	
	1970	1984
Rural-rural	45.5	48.0
Rural-urban	32.3	33.1
Urban-urban	13.8	12.0
Urban-rural	08.4	07.1

Source: 1970 and 1984 Census Reports of Ghana

C. Rural-Rural Migration

It is evident from the table that there is a predominance of rural-rural migration in Ghana, even though rural-urban migration is also substantial. Even so, sight should not be lost of the fact that rural-urban migration has received much attention in the literature. Rural-rural migration is often neglected in the literature largely because its impact on the socio-economic development of the country has been considered minimal. 45.5 % of all migrants in 1970 were engaged in rural-rural migration as compared with 32.3 % in rural-urban, 13.8 % in urban-urban, and 8.4 % in urban-rural. By 1984, the proportion of migrants in rural-rural migration has increased to 48.0 %, compared with 33.1 % for rural-urban, 12.0 % for urban-urban and 7.1 % for urban-rural. It must, therefore, be noted that the percentage of migrants in rural-rural migration has been increasing, while that for urban-urban and urban-rural has been decreasing. Rural-urban migration increased rather slightly.

The predominance of this type of migration in Ghana should be expected as 65 % of the labour force is employed in subsistence agriculture, involving mainly shifting-field cultivation. Hodder (1968) explains that shifting-field cultivation presupposes the movement of small scale farmers over short distances in search of fertile land for farming. Short distance movements will largely involve movement from one rural area to the other, and hence the predominance of rural-rural migration in Ghana. As shown later in this study, the direction of movement is mainly from north to south. The predominance of rural-rural type of migration, it should be noted, is not peculiar to Ghana. In fact, the situation in Ghana corroborates the view expressed by Udo (1975) and Gwan (1976) that rural-rural migration is the main type of migration in Nigeria and Cameroun respectively. This study believes that rural-rural migration is likely to predominate in areas where agriculture is the mainstay of the economy.

The second largest type of migration is rural-urban. As a result of its effects on urbanisation, and the problems associated with it in both the areas of origin and destination, rural-urban migration has received much attention in the literature. The least predominant type of migration is urban-rural which involved only 7.1 % of all migrants in 1984.

D. Internal Migration Estimates: National Level

According to the United Nations (1970:5), it is possible to classify the enumerated population under two groups, those enumerated in their locality of birth, and those enumerated outside their locality of birth. Table 4 shows the distribution of the population according to their region of enumeration. The table reveals that in 1960, 58 % were enumerated in the region of birth, as compared with 57 % and 56 % for 1970 and 1984 respectively. This shows that the proportion of the population enumerated in the region of birth continues to dwindle gradually, while the proportion enumerated outside the region of birth is rising. The proportion of the population enumerated in regions other than the region of birth increased from 12.0 % to 17.9 % between 1960 and 1970, and from 17.9 % to 21.6 % by 1984. This represents an increase of 72 % during the study period.

Table 4 Distribution of Population by Locality of Birth, Ghana, 1960-84

Year	Locality of Birth	Another Locality Same Region	Another Region
1960	58.0	22.0	12.0
1970	57.1	20.9	17.9
1984	56.0	18.1	21.6

Source: Census Reports of 1960, 1970, and 1984

E. Intraregional Migration

Table 4 also reveals some aspects of intraregional migration in Ghana. According to the 1960 census, 22.0 % of the population were enumerated in another locality but within the same region of birth. This proportion of migrants decreased slightly to 20.9 % in 1970 and 18.1 % in 1984. So that during the study period, a substantial percentage of the population has been enumerated in another locality in the region of birth. This attests to the fact that even though little work exists in the literature, intraregional migration is discernible in Ghana. The proportion of the population involved in intraregional migration was higher than that for interregional migration for all the census years in the study except 1984. In 1960, 22 % of the population was engaged in intraregional migration as compared with 12 % who were involved in interregional migration. By 1984, the proportion of people in interregional migration has increased to 21.6 %, while that for intraregional migration decrased to 18.1. Thus intraregional migration is decreasing, while interregional migration is increasing.

F. Internal Migration Estimates from Place of Birth Data

Tables 5, 6, and 7 present life time in-migrants, life time out-migrants, and net migration from 1960 to 1984. Three regions--Greater Accra, Ashanti, and Brong Ahafo--recorded gains in net migration for each of the census years in the study period. In 1960 the largest number of net migrants was found in the Ashanti region (96563), followed by Greater Accra (90109) and Brong Ahafo (84566). A region has a positive net migration when it records overall gains in migration. Negative net migration occurs when a region records overall losses in migration with respect to the other regions. It must also be noted that the central region recorded net migration of over 16000 in 1960, although it incurred losses in the other two census years. In addition, it is indeed interesting to learn that in 1960 Ashanti Region, not Greater Accra Region, recorded the largest number of net migrants. The explanation for this lies in the argument presented by Goldscheider (1971). During the period before the attainment of independence in 1957, the migration pattern was simply the movement of people to plantations, mines, and areas with timber industries. The Ashanti

Region has always been a leading food and timber producing area, while the leading goldmine at the time, the Obuasi Goldfields, was located in the heart of Ashanti. Six other regions lost migrants for each census year during 1960-84. The largest losses in 1960 were recorded in the Volta Region (table 5).

Table 5 Life Time Migrants, Ghana, 1960

Regions	Sex	In-Migrants	Out-Migrants	Net, Migrants	Both Sexes
Western	M	47828	53573	-5745	-18034
	F	36261	48550	-12289	
Central	M	65666	51299	14367	16468
	F	50856	48755	2101	
G Accra	M	82165	30711	51454	90109
	F	66860	28205	38655	
Eastern	M	85570	92441	-6871	-18519
	F	72004	83652	-11648	
Volta	M	22051	73825	-51774	-94452
	F	19992	62670	-42687	
Ashanti	M	115633	60507	55126	96563
	F	89433	47996	41437	
B Ahafo	M	63721	12966	50755	84566
	F	45226	11415	33811	
North	M	13650	54259	-40599	-56830
	F	12256	28487	-16231	
U East	M	8942	48251	-39309	-58883
	F	7465	27039	-19574	
U West	M	6411	33815	-27404	-41341
	F	5740	19677	-13937	

Source: 1960 Population Census Data

As a result of the rapid development of the Greater Accra Region following independence, the region recorded the largest number of net migrants by 1970 (272809). The rapid exploitation of the rich forestry and mineral resources of the Western Region resulted in the region recording over 28500 net migrants. The Brong Ahafo (117291) and Ashanti (72402) were the only other regions to gain by migration in 1970, as shown in table 6. The remaining six regions lost population by migrations, with the Volta Region (-169089), Eastern Region (-99644), and Northern Region (-98554) incurring the largest losses. The gender differentials in migration are discussed elsewhere in the study.

Table 6 Life Time Migrants, Ghana, 1970

Regions	Sex	In-Migrants	Out-Migrants	Net, Migrants	Both Sexes
Western	M	86744	66450	20294	28548
	F	70582	62328	8254	
Central	M	79334	88687	-9353	-35925
	F	63525	90097	-26572	
G Accra	M	190871	45353	145518	272809
	F	168750	41459	127291	
Eastern	M	109277	157833	-48556	-99644
	F	96087	147175	-51088	
Volta	M	35864	127864	-92000	-169089
	F	34893	111982	-77089	
Ashanti	M	155417	115968	39449	72402
	F	128561	95608	32953	
B Ahafo	M	103683	34525	69158	117291
	F	79130	30997	48133	
North	F	22652	87809	-65157	-98554
	F	19251	52648	-33397	
U East	M	19303	59519	-40216	-57961
	F	13528	31273	-17745	
U West	M	14534	33671	-19137	-29877
	F	18635	29375	-10740	

Source: 1970 Population Census Data

Little change is found in the pattern of internal migration in Ghana during the 14-year period from 1970 to 1984. Greater Accra Region continued to take a disproportionate share of life time in-migrants and, thus, net migrants (434000) more than two times the net migrants recorded for any other region. Brong Ahafo Region also maintained the second spot with over 150300 net migrants, a slight increase over its net migration level for 1970. The Ashanti Region followed with a net migration of 99100, while the Volta Region lost the largest number of migrants perhaps because of the low level of development and proximity to the more developed Greater Accra and Ashanti Regions (table 7).

Table 7 Life Time Migrants, Ghana, 1984

Region	Sex	In-Migrants	Out-Migrants	Net, Migrants	Both Sexes
Western	M	108145	98815	9330	-6854
	F	79274	95458	-16184	
Central	F	109892	114037	-4145	-24530
	F	93170	113555	-20385	
G Accra	M	310236	68709	241527	4340013
	F	259785	67311	192474	
Eastern	M	151382	227898	-75616	-145856
	F	134733	204073	-69340	
Volta	M	51293	163663	-112370	-215150
	F	46556	149336	-102780	
Ashanti	M	218483	170597	47886	99170
	F	188143	136859	51284	
B Ahafo	M	141029	53099	87930	150328
	F	111139	48741	62398	
North	M	32249	143594	-111345	-167402
	F	30450	86507	-58677	
U East	M	26381	85058	-58677	-83999
	F	19977	45299	-25322	
U West	M	24436	47056	-22620	-38708
	F	25444	41532	-16088	

Source: 1984 Population Census Data

It is worthwhile to note that all three regions in the northernmost parts of the country lost people during the entire study period. Northern, Upper East, and Upper West lost some of the largest number of net migrants during each census year in the study period. A possible reason for this is the the wide disparities in the provision of socio-economic amenities for the different regions of the country. It is also clear that more and more people have been moving to the Greater Accra Region, and that the development of Accra as a primate city will continue unabated. A full discussion of the determinants of migration is presented later in this study. For the entire study period, net migration to the Greater Accra Region increased annually by 15.9 % from 90109 in 1960 to 434001 in 1984, and this is indeed substantial.

G. Estimates of Net Intercensal Migration

Net intercensal migration to the various regions of Ghana during the 1960-70 period are shown in table 8.

Table 8 Net Intercensal Migration, Ghana, 1960-70

Regions	In-Migrants		Out-Migrants		Net Migrants		
	1960	1970	1960	1970	Among Out-born	Among In-born	Total
Western	84089	157326	102123	128778	88037,	-44629	43408
Central	116522	142859	100054	178784	46845,	-96340	-49495
G Accra	149025	359621	58916	86812	236824,	-38265	198559
Eastern	157574	205364	176093	305008	75523,	-159907	-84384
Volta	42043	70757	136495	239846	36114,	-127374	-91260
Ashanti	205066	283978	108503	21576	115004,	-122170	-7166
B Ahafo	108947	182813	24381	65522	93041,	-45432	47609
North	25906	41903	82736	140457	20556,	-72283	-51727.
U East	16407	32831	75290	90792	19312,	28753	-9441
U West	12151	33169	53492	60648	23157,	-16571	6586

Source: Computed from 1960 and 1970 Census Data

H. Similarities

Even though some similarities exist in the patterns of net migration for the census years of 1960; 1970, and 1984 on the one hand, and the periods 1960-70 and 1970-84, some notable departures are discernible. One similar finding is that Volta Region recorded the largest losses in the census years as well as during the said periods. Another similar finding is that Greater Accra Region recorded the most substantial gains in net migration in both the census years and the 1960-70 and 1970-84 periods, as indicated in table 9.

Table 9 Net Intercensal Migration, Ghana, 1970-84

Region	In-Migrants		Out-Migrants		Net Migrants		
	1970	1984	1970	1980	Among Out-born	Among In-born	Total
Western	157326	187419	128778	194273	58884,	-89061	-30177
Central	142859	203062	178784	227592	86346,	-81525	4821
G Accra	359621	570021	86812	136020	276210,	-65095	211115
Eastern	205364	286115	305008	431971,	118333	-182779	-64446
Volta	70757	97849	239846	312999	40041,	-117045	-77004
Ashanti	283978	406626	211576	307456	, 174616	-134598	40018
B Ahafo	182813	252168	65522	101840	102810.	-115348	-86884
North	41903	62699	140457	230101	28464,	-115348	-86884
U East	32831	46358	90792	130357	19535,	-56180	-36645
U West	33169	49880	60648	88588	22781,	-39039	-16258

Source:Computed from 1970 and 1984 Census Data

During the 1960-70 intercensal period, for example, the Volta Region lost 91,260 migrants to the other administrative regions, while net migration to the Greater Accra Region increased from 198,559 during the 1960-70 period to 211,115 during the second intercensal period; this shows an increase of 6.3 %. As expected, most of the regions which lost migrants in the three census years lost again during the intercensal periods.

I. Departures or Differences

Two notable exceptions are outstanding: the Upper West Region which recorded losses in all the census years, gained over 6500 net migrants during the 1960-70 intercensal period; on the contrary, the Ashanti Region which experienced positive net migration in the census years, lost over 7000 net migrants during the 1960-70 period. The basic reason for this loss is that this intercensal period saw the rapid development of the Greater Accra Region in the fields of housing, industrialisation, education, transportation and so on. As a consequence, people moved from the other regions to settle in Greater Accra, as it will be shown later.

J. Estimates From Census Survival Ratio Method

Forward and reverse census survival ratio methods are employed here to estimate net migration for the regions, using national survivorship probabilities. In the first approach, survival ratios are applied to the population at the first census, while in the second technique, the survival ratios are applied to the second census. Symbolically, the first method is represented as follows:

$$\text{Net } M(x) = Px+n,t+n - S.Px,t$$

where $M(x)$ is the net migration of survivors among persons aged x at the first census, Px,t is population aged x at the first census, $Px+n,t+n$ is the population aged $x+n$ at the second census and S is the survival ratio. With regard to the second method, the formula becomes.

$$\text{Net } M(x) = 1/S.Px+n,t+n\ -Px,t$$

These two procedures yield two different estimates of net migration and an average of the two has been taken. The results are presented in appendices 4 and 5. Some 60 % of the regions lost people during the 1960-70 period. Greater Accra, Ashanti, Brong Ahafo, and Northern are the only regions to record net gains of people through migration during that period. The largest gains occurred in Greater Accra (203,882), followed by Brong Ahafo (119,344), Ashanti (40591) and Northern (8976) in that order. The significant losses were incurred in Upper East (-126,229), Eastern (-83,196), Central (-38,391) and Volta (-25,216). The lowest loss of 3841 was recorded for the Brong Ahafo Region.

The large number of migrants to the Greater Accra Region is explained by the fact that the 1960-70 period saw the rapid development of the city of Accra into a primate city. Many people were attracted to the region to avail themselves of the new opportunities in employment, education, housing and so on. Similar reasons explain the substantial gains made by the Ashanti Region in net migration about the same time.

Appendix 5 shows that the pattern of net migration obtained from the census survival ratio method for the 1970-84 period is not very different from the pattern for the preceding intercensal period. 70 % of the regions lost migrants, and only Greater Accra (159,966), Ashanti (11,621), and Brong Ahafo (3327) recorded positive net migration. The largest losses were incurred by Volta (-131,371), Eastern (-36,272), and Northern (-72,540). It is worthy to note that the differences between the results from the place of birth data and the census survival ratio methods may be attributed to age errors and to unequal completeness of count or coverage during any two censuses. No estimates of this difference in coverage has been attempted here because of inappropriate data. The use of the census survival ratio method is justified because this study employs census data. Besides, other researchers on migration in Ghana have used the same technique and this will allow for the comparison of results, while the study will also be consistent with the literature.

K. Estimates from Life Table Survival Ratio Method

The survival ratios employed to estimate net migration are close approximations for the country as a whole, and for the regions. Life expectancy values used in this study are presented in table 10. These have been selected on the basis of the evidence in the literature (see, for example, Gaisie and De Graft-Johnson, 1976; and Jain, 1982).

Table 10 Life Expectancy at Birth, Ghana, 1960-85

Year	Male	Female
1960-65	42.0	45.0
1965-70	44.3	47.4
1970-75	44.3	47.5
1975-80	47.1	50.0
1980-85	51.5	55.0

Source: Gaisie and De Graft-Johnson, 1976; Jain 1982; etc

The North Family life tables from the Coale and Demeny Tables are used. Evidence from the literature tends to support the appropriateness of this family to Ghanaian mortality (see, for example, Cantrelle (1981), Jain (1982), and Gaisie (1976) According to the literature, the survival ratio from birth to age one is appropriate in both the West and North Models. However, the probability of dying between ages 1 and 4 is not well represented in the West model. The mortality pattern exhibited in Ghana and other West African countries tend to fit the pattern in the North model. The results are presented in Appendices 6 and 7. According to the life table survival ratio method, all regions lost migrants during the 1960-70 period except Greater Accra. Greater Accra Region received 157,731 migrants during that

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period. The largest loss occurred in the Eastern Region, where over 125,000 migrants were lost. The Upper West Region (-122,153), Upper East Region (-95,351) and Central Region (-69,913) recorded substantial losses. With a net migration of -59,236, the Volta Region also lost large number of migrants during the period.

The pattern of net migration estimates for the 1970-84 period is similar to the one for the 1960-70 period. The Greater Accra Region was the only region to gain people (115,941), while the largest losses were found in Eastern Region, Volta Region, Ashanti Region, and Central Region (appendix 7).

The reasons for employing the life table method are the same as those presented earlier for the use of the census survival ratio method.

L. Life Table and Census Survival Method

The results obtained from the simultaneous application of the forward census survival ratio method and the life table survival ratio method are shown in tables 13 and 14. During 1960 and 1970, all regions lost people except Greater Accra and Upper West (appendix 8). The two regions gained 157,724 and 78,897 people respectively during that decade. The largest losses were in Upper East (-253,030), Ashanti (-234,387), Eastern (-124,601), and Central (-68,125).

The pattern for the 1970-84 period was similar to that of 1960-70 period in that most regions lost migrants. Only two regions, Greater Accra (28,579) and Upper East (14,284), recorded net migration gains. The Volta Region (-180,837), Central Region (-147,183), Eastern Region (-142,273), and the Ashanti Region (-146,826) were among the major losers (appendix 9).

M. Comparison of Estimates from Various Methods

Even though vast differences exist in the results obtained from the various methods, all the methods attest that Greater Accra Region has been the major migrant receiving region. In addition the results from all the methods also agree that Volta, Eastern, Upper East and

Upper West are the major migrant sending regions. The fact that the results of the methods tend to agree on the main migrant receiving region and major migrant sending regions shows that the effects of the assumptions in each method has not been drastic.

The place of birth method appears more plausible as it uses basically observed data. The other methods have various inherent assumptions; life table survival ratio method assumes the prevalence of a certain level of mortality in the country, but this may differ from the actual mortality which prevailed in the country. Besides, it is assumed that national mortality level is applicable to all regions, but again this may not be so. Similarly the census survival ratio method assumes that national growth rates are uniformly applicable to all regions and so on. It assumes also that completeness of enumeration is the same for all the census years. The place of birth method has the problem of poor quality of data, but all the other techniques have the same defect as well. The place of birth estimates are accordingly accepted and used in the computation of rates and in the regression analysis.

N. Age and Sex Patterns of Internal Migration

Even though direct data on the age-sex distribution of migrants are not available for the regions, it is possible to derive some information from census survival ratio method and the place of birth technique. Notwithstanding the paucity of data in terms of age misreporting and misstatements, the population of any census year may be survived to the following census by age and sex and, thus, obtain some useful information on the age-sex patterns of migration.

A glance at the place of birth data reveals that more males moved from their region of birth during the entire study period in all ten regions. It is realised that more and more males have been enumerated outside their region of birth (tables 14 and 15). For example, in 1984, 7.2 % of the males born in the Western Region were enumerated in the Greater Accra Region as compared with 5.4 % of the females. 2.7 % of the males born in the Ashanti Region was enumerated in the Central Region as compared with 1.9 % of the females. 1.2 % of males born in Upper East were found in the Volta Region as compared with only 0.7 % of the females, and this is true for the other regions. Tables 14 and 15 show further that more females have been enumerated in their region of birth than males, indicating higher migration for males. 80 % of males born in the Western Region was in that region as compared with 83 % of the females. In the Greater Accra Region, 82 % of the males and 85 % of the females born in that region were in that region in 1984. In fact this picture is true for 1960 and 1970 as well, indicating a higher propensity to migrate for males.

It is seen in migration literature that most migrants are young, mostly in the under 35 age group (see, for example, Shaw 1975). In the more developed countries, more young adults are found in the migration streams. Migration largely involves the 15-34 age group, comprising mainly recent school graduates. It must also be noted that there is a substantial proportion of elderly migration. The composition of this segment of migrants include mobile retirees and other elderly people who are no longer interested in their usual place of residence.

It is evident from tables 11 and 12 that this is also true for Ghana. In fact the 0-34 age group takes 60 % of all the net migrants (table 11). The unusually large number of migrants in the 0-14 age group in some regions is explained by the fact that the 0-14 population is comparatively larger, taking over 45 % of the population in most regions, and over 48 % of the national population. It is also because the 0-14 years age group includes persons born in 1970. The 34-49 and the 50+ age groups also recorded various levels of migration. It is seen that the migration of the population aged 50+ was less substantial, unlike other parts of the world, where documented evidence suggests that migration of the elderly is increasingly significant (see, for example, Northcott 1985 and 1988). Unfortunately, the available data do not allow the determination of the composition of the migrants in the 50+ age group. Specifically, it is not possible to determine if these migrants are largely retirees or not. Northcott (1988:90) points out that an increasing proportion of Canada's elderly are mobile retirees, and it is likely that the small proportion of elderly migrants in Ghana may include many retirees (table 12). The problem with the Ghanaian situation is that even though the official retirement age is 65 years, many people especially those in non-governmental employment continue to work after age 65. In addition, farmers, hunters, fishermen and other people working on the land continue to work for as long as their health will allow.

It should also be noted that the corresponding percentages for the data in tables 11 and 12 are found in tables 14 and 15.

Table 11 Migration by Age, Ghana, 1960-70

Region	Net Migration by Age Group							
	0-14		15-34		35-49		Over 50	
	Male	Female	Male	Female	Male	Female	Male	Female
Western	-7529	-3472	2187	-3732	-1917	-2079	-4006	-5699
Central	-11067	-11735	-8595	-5813	-1675	-13423	-2326	-12892
G Accra	61728	63998	43364	5837	4769	14041	-1757	5598
Eastern	-10277	-20918	-21244	-17076	-3336	-154	-4912	-5183
Volta	-8041	-12038	-932	-4477	4041	3949	-1618	-2414
Ashanti	22594	20546	-2738	-1948	-1119	2270	263	-3457
B Ahafo	523	-3871	2848	-1840	-4069	-402	2665	305
North	-18923	-5572	15484	4736	2231	-262	-11307	1877
U East	-26175	-36380	2286	-40844	2811	-20533	-503	-6871
U West	-13992	-1656	-13693	5602	2698	4659	-4130	-901

Source: Estimated from Census Survival Ratio Method

0-14 age group may include persons born in 1970

Table 12 Migration by Age, Ghana, 1970-84

Region	Net Migration by Age Group							
	0-14		15-34		35-49		Over 50	
	Male	Female	Male	Female	Male	Female,	Male	Female
Western	14064	-10823	19003	-340	961,	-4544	-22304	-19025
Central	-38880	-46817	-9373	-4253	6239,	-1683	-10573	-10627
G Accra	85782	50123	5609	-25354	-8819,	-3624	-9062	-10367
Eastern	-29104	-60012	9677	1997	8343,	&217	-12140	-8388
Volta	-45522	-56985	6865	-34071	6803,	-5139	-11987	-10807
Ashanti	-20194	-57491	3363	-19234	4252,	-8145	-13269	56088
B Ahafo	2249	-18306	-12433	-2137	2171,	-4895	-3164	-9972
North	-12817	16495	28696	4236	4616,	-4256	4616	-2373
U East	-22189	1963	29769	13651	5688 ,	-6650	-6418	-517
U West	-13952	-1656	13693	5602	2698 ,	-4659	-4130	901

Source: Computed from Census Survival Ratio method

0-14 age group may include persons born in 1984

O. Interregional Migration in Ghana, 1960

Estimates of interregional migration in Ghana from place of birth data for 1960 are presented in table 13 and appendices 10 to 18. Four regions-Greater Accra, Ashanti, Brong Ahafo, and Central --gained from the other regions over all. In fact Greater Accra gained from all other regions in 1960 except Brong Ahafo (table 13). The loss of 1989 migrants to Brong Ahafo may be explained by the fact that the creation of the Brong Ahafo Region led to the opening of branches of various Departments and Ministries, and the compulsory posting of civil servants, mainly from Accra. The fertile lands of Brong Ahafo, and the large tracts of exploitable timber and forest products

Table 13 Net Migration To Greater Accra, 1960

Region of Birth	Enumerated in G Accra	Migrants from G Accra	Net Migration
Western	14602	6230	8372
Central	18161	7748	10413
Eastern	58802	26050	32752
Volta	30925	4369	26556
Ashanti	12231	8340	3891
B Ahafo	1178	3167	-1989
Northern	5514	1265	4249
U East	4593	1054	3539
U West	3019	692	2327
Total			90110

Source: Derived from Appendix 1

no doubt contributed to this as well. This further explains why Brong Ahafo was the only region to gain from all other regions in 1960. The largest gain to Brong Ahafo was from the adjoining Ashanti Region(23536), followed by the not too distant Eastern Region (10886), while the smallest net migrants came from Upper East (12163) and Upper West (3398), as shown in appendix 10.

It is indeed interesting to learn that the largest net migrants to the Greater Accra Region came from the neighbouring Eastern Region (32752), and Central Region (10413). The Volta Region, which is also nearby, lost 26556 migrants to the Greater Accra Region. It is also significant to note that the smallest number of net migrants were from the distant Upper West Region (2329), while the Northern, Western, and Upper East also lost smaller numbers of migrants to Greater Accra (table 13).

The Ashanti Region, which is the most populous region in the country and contains the second largest city of Kumasi, gained from all regions except Greater Accra and Brong Ahafo. The Ashanti Region lost some 23536 migrants to the nearby Brong Ahafo Region and only 3891 to the Greater Accra Region. It must be mentioned that the largest net migrants to the region came from the bordering Eastern Region (30854), while Northern (25024), Upper East (20853), Western (14257), and Upper West (13702) also lost substantially to the Ashanti Region, manifest in Appendix 11.

It is interesting to note that the Eastern Region, the second most populous region, lost people to three regions in 1960; in particular, it lost large numbers of migrants to Greater Accra (-3275), and Ashanti (-30854), the two regions with which it has common borders. It gained small numbers of people from Northern (6141), Upper East (5633), Upper West (3702), Central (1221), and Western (946). The only substantial gain in net migration to the Eastern Region was from the Volta Region with which it shares common borders. Despite the fact that the Eastern Region gained from six regions, it lost 19000 people overall, largely because it lost so much to the

Ashanti and Greater Accra Regions.

Appendix 13 shows that net migration to the Central Region in 1960 was positive overall (16468). It lost, however, to Greater Accra (-10413), Ashanti (-11402), Brong Ahafo (-4233), and Eastern (-1221). Sizeable gains in net migration were made by the region at the expense of the Volta Region (10248), adjoining Western Region (17432) and Northern Region (6744). Other regions which lost migrants to the Central Region in 1960 include Upper East (5621), and Upper West (3692).

The Western Region recorded net migration gains from four regions and lost migrants to the other five regions. It gained from Volta (8240), Northern (5451), Upper East (4531), Upper West (2995). It lost substantially to the bordering Central Region (-17432), Greater Accra (-8372), and Ashanti (-14257). The result was that the Western Region recorded an over all loss of 23188 net migrants in 1960, as shown in appendix 14.

The Volta Region received excess migrants of 3153, 2635, and 1727 from the Northern, Upper East, and Upper West Regions respectively in 1960. It lost over 37700 migrants to the nearby Eastern Region, 26556 to Greater Accra, 13052 to Ashanti, 10248 to the Central Region and 94446 migrants over all in that year (see appendix 15).

The three northernmost regions--Northern, Upper East, and Upper West Regions-- lost substantially to their southern counterparts. Goldscheider (1971) points out that, in the colonial period and the early post independence period, the pattern of internal migration was a north-south movement of migrants to work on cocoa plantations, mines, and commercial coastal settlements in the south. It is, therefore, a matter of course that the Northern Region lost 25024 migrants to the Ashanti Region, and 15084 to its southern neighbour, Brong Ahafo (appendix 16). It lost less spectacularly to Greater Accra (-4249), Central (-6744), and Western (-5451). It managed slight gains of 4307 from Upper East, and 4827 from Upper West. The

Upper East Region lost to all regions except its neighbour, the Upper West Region from which it gained a mere 383 net migrants. According to appendix 17, the largest losses of the Upper East Region were to the Ashanti Region (-20853), and Brong Ahafo Region (-12153). The region lost only 3539 migrants to Greater Accra, 5633 to Eastern Region, and 5621 to Central Region.

It is necessary to mention that the Upper West Region was the only region to lose migrants to all the remaining nine regions in 1960. This region lost 13702 migrants to the Ashanti Region, 7986 migrants to Brong Ahafo, 2327 migrants to Greater Accra, and some 383 to the Upper East Region, as indicated in appendix 18.

P. Interregional Migration in Ghana, 1970

The pattern of interregional migration established in 1960 continued in 1970 with some exceptions. In 1970, Greater Accra exerted its supremacy and gained from all other regions. Again the largest gains were at the expense of bordering regions. 94302 migrants were gained from Eastern, 35186 from Central, 68271 from Volta, and 30002 from Western Region (appendix 19). These substantial losses to the Greater Accra is explained by the fact that by 1970 the development of Accra as a primate city has reached an advanced stage, with an overcentralisation of government activities.

Q. Eastern and Ashanti Regions

Appendix 20 shows that the Eastern Region experienced no drastic change from 1960. It gained 48338 from the Volta Region with which it shares borders, 4414 from the Northern Region, 3243 from Upper East and 1711 from Upper West. It recorded large losses to Greater Accra (-94302), Ashanti (-34229), and Central (-7625). Overall, the Eastern Region recorded a net loss of over 92000 migrants to the other regions (appendix 20)

There was no drastic change in the pattern of net migration to the Ashanti Region, even though the number of migrants involved changed. The Ashanti Region gained from all other regions except Greater Accra and Brong Ahafo to which it lost migrants in 1960.It continued to gain fropm Eastern (34229), Northern (33650), and Upper East (24162), as shown in appendix 21.

R. Central and Western Regions

Appendix 22 shows that in 1970, the Central Region recorded positive net migration from five regions, lost to the four other regions, and had an overall loss of 30431 migrants. The departure of the 1970 pattern from the 1960 one is that the Central Region lost over 31000 migrants to the neighbouring Western Region, and gained some 7625 from its other neighbour, the Eastern Region. Yet another change from 1960 is that the Central Region enjoyed a small gain of 2747 from the Ashanti Region to which it lost 11402 in 1960. The gains from the other regions may be attributed to massive development of secondary education which occurred in the Central Region during the 1960-70 period. The region now has a disproportionate share of the countries second cycle institutions.

The expansion of existing mines and the opening of new ones in Nsuta, Prestea, Tarkwa, Aboso, and the opening up of the Western Region for farming, forestry, fishing and industrial activity led to the region gaining over 28500 net migrants in 1970. During the period 1960-70, the Sekondi-Takoradi twin city became the third largest city in the country, after Accra and Kumasi. The natural harbour of Takoradi was also expanded resulting in increased industrial activity and services which attracted a lot of people to the region. It is therefore, a matter of course that the Western Region gained from all other regions except the Ashanti (-2161), Greater Accra (-30002), and Brong Ahafo (-1118). The largest gain was from the neighbouring Central Region (31650), while substantial gains were also made from Eastern (6605), Northern (5426), Volta (11770), Upper East (3518), and Upper West (2860) manifest in appendix 23.

S. Volta, Northern, Upper East and Upper West

Interestingly, there appears to be no change in the patterns of net migration to the Volta Region for 1960 and 1970. It lost to all regions, except Northern, Upper East, and Upper West. It lost substantially to Greater Accra (-68271), Eastern (-48338), and Ashanti (-17290) (appendix 24). It is seen from appendix 25 that the Northern Region established a new net migration pattern in 1970. It took over from the Upper West Region as the only region to lose people to all the other nine regions. It lost mainly to Ashanti (-33650), Brong Ahafo (-28795), and Greater Accra (-8320), and recorded an over all loss of 97383 people.

Net migration to the Upper West Region in 1970 is presented in appendix 26. It is indeed interesting to learn that this region which lost to all other regions in 1960 gained 5261 people from the Northern Region, and another 523 people from the Upper East Region. It is very difficult to explain this change in net migration pattern. Perhaps the opening up of the region for exploitation and settlement, and the increased trade with Burkina Faso may have contributed to this. Only little changes occurred in the net migration pattern for the Upper East Region in 1970. It lost to all regions except the Northern Region from which it gained 4171; it lost some 523 people to the Upper West Region from which it gained 383 people in 1960. Again its largest losses were to Ashanti (-24162) and Brong Ahafo (-20188) as indicated in appendix 27.

In 1970, Brong Ahafo Region recorded an overall net migration of 117,291. It lost only 1271 people to Greater Accra and gained substantially from Volta (28,795), Ashanti (27,240), Northern (20,188), and Eastern (14,649). Appendix 28 shows further that Brong Ahafo continued to make slight gains from the remaining regions.

T. Net Interregional Migration, 1984

In general, no drastic changes occurred in net migration pattern in 1984. Greater Accra Region continued to gain from all other regions, recording large gains from Eastern (129,821), Volta (98,717),Ashanti (56,323), Western (52,939), and Central (54,692). Marginal gains in net migration were made with respect to distant regions (appendix 29). The interregional migration pattern for most regions was generally the same as in 1960 and 1970 and this is seen in apendices 30 t0 37.

The Ashanti Region gained an over all net migration of 98,170, but lost 56,323 people to Greater Accra, 31,909 and 1317 people to Brong Ahafo and Central Regions respectively. Again the loss to the Central Region is due to the large number of Ashanti born students and teachers in the Central Region. The Ashanti Region continued to gain from Eastern (53,204), Northern (55,965), and Volta (15,274) as shown in appendix 30. As in 1970, the Eastern Region lost to all regions except Volta, Northern, Upper East and Upper West, gaining 67,205, 3454, 3323, and 1306 from the four regions respectively. Large losses were incurred to Greater Accra (-129,821), Brong Ahafo (-18,170), Ashanti (-53,204), and Central (-16,892). Appendix 31 shows further that the Eastern Region lost only slightly to the Western Region in 1984.

The available evidence shows that both the Central and Western Regions gained from six regions and lost to the three remaining regions in 1984. The Central Region lost 54,692 people to Greater Accra, 23,480 to Western, and 1507 to Brong Ahafo and recorded an over all loss of 24,530 people in that year (appendix 32). The Western Region, on the other hand, lost 52,939 people to Greater Accra, 9026 to Ashanti, and 1090 to Brong Ahafo, recording an over all loss of only 6854 people. It must also be noted that the Western Region continued to gain from the neighbouring Central Region, as indicated in appendix 33.

The Volta Region lost to most regions in 1984, and gained only from Northern, Upper East and Upper West Regions. It lost substantially to Greater Accra

(-98,717), Eastern (-67,205), Central (-18,812), and so on. The pattern here is no different from that of 1970, as the Volta Region again recorded the largest net migration loss of 222,602 (appendix 34). Similarly, evidence from appendix 35 shows that the Brong Ahafo Region did not record any changes in net migration pattern in 1984. The region gained from all other regions and lost only some 4242 people to the Greater Accra Region.

As indicated in appendix 36 the Northern Region lost to all the other regions in 1984, while the pattern for Upper East was the same as in 1970. It lost to all regions except Northern from which it gained 7110 people (appendix 37). Only a modest change in pattern occurred in net migration in the Upper West Region in 1984 (appendix 38) It gained 1421 people from the Upper East Region and lost to all the remaining regions.

It is pointedly asserted here that during the entire study period, 1960-84, three regions--Greater Accra, Ashanti, and Brong Ahafo--gained substantial number of people from the other regions. It is also true that Greater Accra gained from all the remaining nine regions in 1970 and 1984, and lost only to Brong Ahafo in 1960. The Volta Region was the largest loser during the study period, although net migration losses in the Eastern Region were also large. The main direction of movement was from north to south even though other directions have been identified. Net migration to Greater Accra from the other regions are shown in figure 8a, while the main source of in-migrants to each region is shown in figure 8b.

U. The Role of Distance in Internal Migration

As explained earlier, discussion of the effects of distance on migration is as old as migration theory itself. The genesis of migration theory included various hypotheses on distance. In his laws of migration, Ravenstein (1885 and 1889) stipulated that migration is generally of short distance and that long distance migration is for commercial purposes only. An attempt is made to determine the role

Fig 8a. Regional Net Migration to Greater Accra, 1984

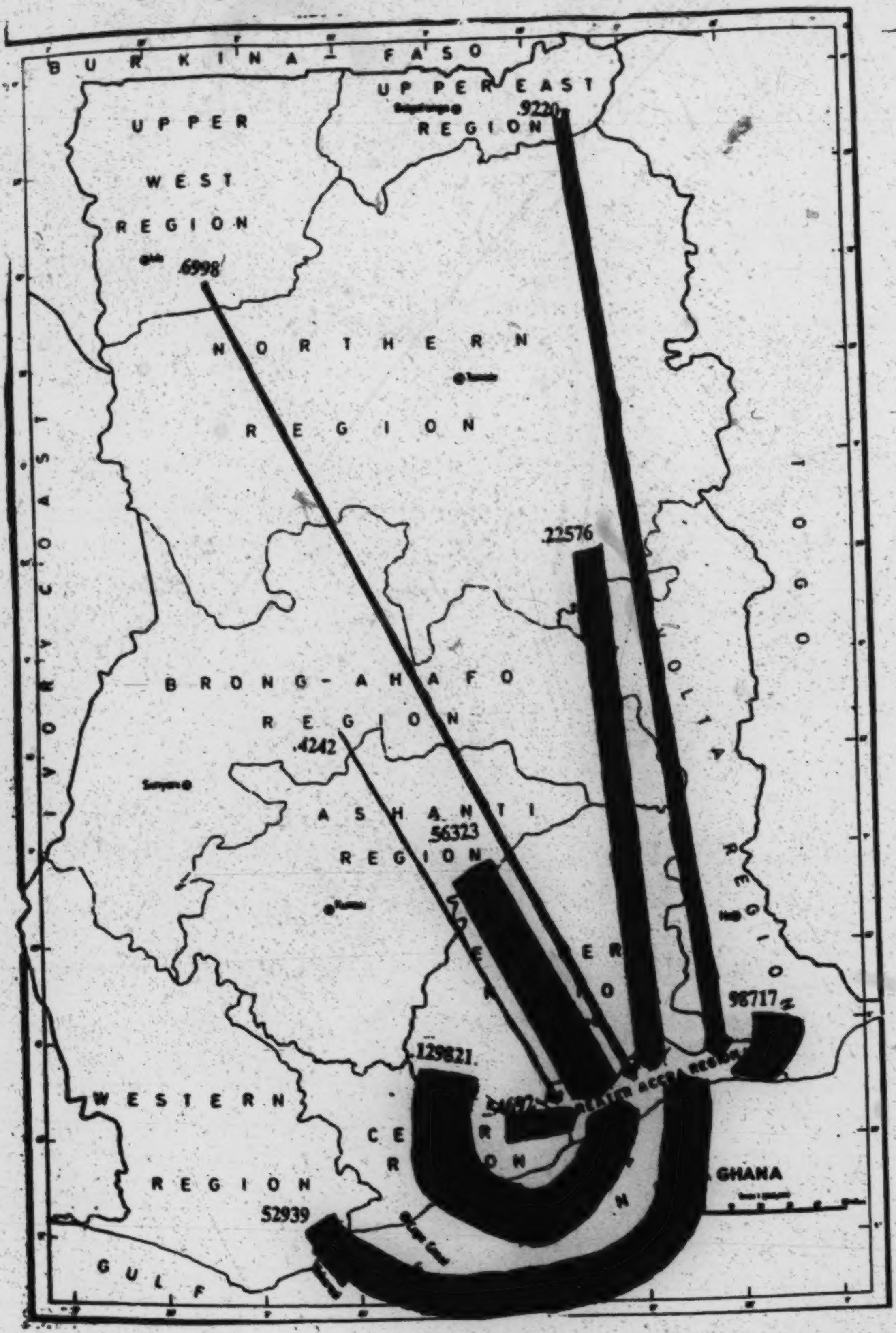
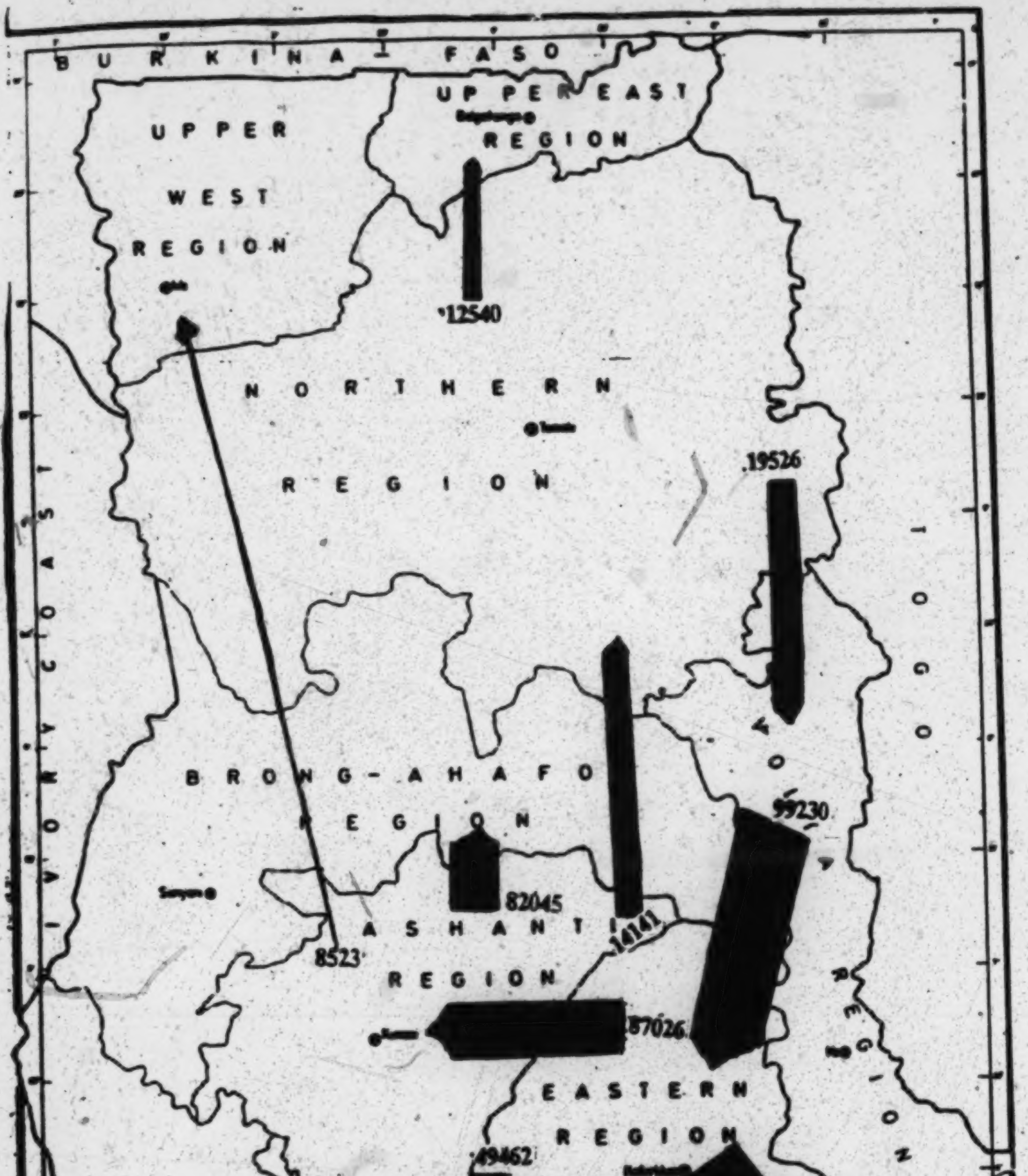

BURKINA FASO
UPPER EAST REGION
.9220
UPPER WEST REGION
.6998
NORTHERN REGION
.22576
IVORY COAST
BRONG-AHAFO REGION
.4242
ASHANTI REGION
.56323
TOGO
VOLTA REGION
98717
.129821
54692
GREATER ACCRA REGION
WESTERN REGION
CENTRAL REGION
52939
GHANA
GULF

Fig 8b. Main Source of In-Migrants to each Region,1984


BURKINA FASO
UPPER EAST REGION
UPPER WEST REGION
NORTHERN REGION
BRONG-AHAFO REGION
ASHANTI REGION
EASTERN REGION
VOLTA REGION
WESTERN REGION
CENTRAL REGION
GREATER ACCRA REGION
IVORY COAST
TOGO
GULF OF GUINEA
GHANA
12540
19526
99230
82045
14141
8523
87026
49462
184077
56233

of distance in Ghanaian internal migration, by finding out if migrants to particular regions have come from nearby regions or from distant ones.

Tables 14 and 15 show the percentage distribution of the population by region of birth and region of enumeration for 1984 and 1970 respectively. It is evident that during the entire study period, most people were enumerated in their regions of birth. Over 82 % of the males born in the Greater Accra Region in 1960, 1970, and 1984, were enumerated in that region, for example. The corresponding figures for the Northern Region were 78.8 %, 79.7 %, and 78.8 % respectively for the three years.

A glance at the tables reveals further that most migrants have been enumerated in the region adjoining their region of birth. This is unquestionably true for most regions during the entire study period, indicating that most migrants move only over short distance. In 1984, the largest proportion of Greater Accra born migrants were enumerated in the adjoining regions. 7 % of the males and 6.3 % of the females born in the Greater Accra Region were enumerated in the neighbouring Eastern Region, while the next higher proportions, 2.5 % of the males and 2.3 % of the females, were enumerated in the adjacent Central Region. The Ashanti Region, which is also close by, received 2.5 % and 2.3 % respectively of the males and females born in the Greater Accra Region. In the same year, the largest number of Eastern Region born people enumerated outside the region were found in Greater Accra. 10.5 % and 9.6 % respectively of the males and females born in the Eastern Region were enumerated in the Greater Accra Region, showing a greater volume of migration between the two neighbouring regions. Further, the largest proportion of people born in the Central Region but enumerated outside the region were found in the Greater Accra Region, 6.6 % of males and 6.2 % of females. 5.0 % of males and 4.8 % of females born in the Central were also enumerated in the adjacent Western Region, while the third largest proportions of 3.2 % of males and 2.5 % of females were found in the neighbouring Eastern Region. On the other hand, it is seen from tables 14 and 15 that the farther away a region is from Greater Accra, the smaller the proportion of

Greater Accra born people enumerated in that region (fig 1). 0.9 %, 0.6 %, 0.4 %, and 0.2 % of males born in Greater Accra were enumerated in the distant Brong Ahafo, Northern, Upper East and Upper West respectively in 1984.

In fact this situation is also true of the other regions. The largest proportion of people born in the Volta Region and enumerated outside the region were recorded in the adjoining Eastern and Greater Accra Regions. 7.7 % of males and 9.0 % of females born in the Volta Region were found in the Greater Accra Region, while the corresponding figures for the Eastern Region were 7.1 % of males and 7.8 % of females. More distant regions like the Upper East (0.4 % of males and 0.5 % of females), and Upper West (0.4 % of males and 0.4 % of females) recorded lower proportions of Volta Region born migrants. With regards to the Northern, Upper East, and Upper West Regions, it is found that the largest proportions of their out-migrants were enumerated in Brong Ahafo and Ashanti Regions which are the neighbouring and closest more developed regions. There is also a substantial movement of people from one of these three regions to the other, as indicated in the proportion of people born in one region and enumerated in the other.

This picture is also depicted for 1970 in table 15. It goes without saying that in Ghana, most people move only short distance and to the nearest more developed region, and that the the volume of migration is greatest between adjacent regions.

Table 14 Population by Region of Birth and Region of Enumeration, Ghana, 1984

Region of Enum	Sex	Region of Birth									
		West	Centr	GAccra	East	Volta	Ashan	B A	North,	U East	U West
West	M	80.2	5.0	2.0	2.6	1.7	2.1,	1.1	1.1	1.0	1.2
	F	83.0	4.8	1.3	1.4	1.1	1.5	0.6,	0.5	0.3	1.0
Centr	M	3.3	79.3	2.5	2.8	1.7,	2.7	1.1	1.3	1.4	1.5
	F	2.9	81.0	2.1	2.6	1.7	1.9	0.8,	0.7	0.4	1.4
G Accra	M	7.2	6.6	82.0	10.5	9.0,	5.0	1.4	2.8	2.1	2.1
	F	5.4	6.2	84.6	9.6	7.8	3.1	0.98,	1.1	0.8	1.9
East	M	3.2	3.2	7.0	74.6	7.7,	2.1	0.8	1.2	1.5	1.4
	F	3.1	2.5	6.3	78.0	7.1	1.5	0.6,	0.7	0.4	1.2
Volta	M	0.4	0.4	1.8	1.9	75.2	0.4,	0.4	1.4	1.2	1.3
	F	0.4	0.3	1.6	1.6	78.1	0.4	0.3,	1.2	0.7	2.0
Ashan	M	4.2	3.7	2.5	4.9	1.6,	81.3	5.4	6.5	6.8	6.9
	F	3.9	3.6	2.3	4.6	1.8	86.0	5.3,	4.1	3.9	4.9

B	M	0.9	0.9	0.9	1.5	1.3	4.6	88.3	4.7	5.0	5.2
Ahafo											
	F	0.8	0.9	0.7	1.2	1.0	4.1	89.9	3.3	2.9	3.0
North	M	0.3	0.4	0.6	0.6	0.9	0.8	0.7	78.8	0.7	0.7
U	M	0.2	0.2	0.4	0.3	0.5	0.6	0.5	1.1	79.4	0.7
East											
	F	0.1	0.1	0.3	0.2	0.3	0.3	0.4	0.8	89.3	1.6
U	M	0.1	0.2	0.2	0.2	0.4	0.4	0.4	1.1	0.9	79.0
West											
	F	0.1	0.2	0.2	0.2	0.4	0.6	0.5	1.2	0.7	81.7

Source: Data from 1984 Population Census

Table 15 Population by Region of Birth and Region of Enumeration, Ghana, 1970

Region of		Region of Birth									
Enum	Sex	West	Central	G Accra,	East	Volta	Ashanti	B Ahafo	North,	U East	U West
West	M	81.2	6.1	2.1	2.6	1.6,	2.4	1.1	1.2	1.3	1.4
	F	83.5	6.1	1.6	1.9	1.2	1.6	0.7,	0.6	0.4	1.1
Central	M	3.1	79.4	2.4	2.9	1.8,	2.7	1.2	1.4	1.5	1.6
	F	3.0	80.5	1.9	2.4	1.6	2.0	0.9,	0.7	0.5	1.4
G Accra	M	6.0	5.5	82.2	10.0	7.8,	3.4	1.1	1.7	1.7	1.8
	F	4.9	4.9	84.4	9.5	6.8	2.3	0.7,	0.7	1.0	0.6
East	M	3.4	3.1	6.9	75.6	7.2,	2.1	0.9	1.3	1.5	1.2
	F	3.0	3.0	6.4	78.2	6.3	1.7	0.7,	0.6	0.4	1.3
Volta	M	0.5	0.4	1.8	1.8	75.3	0.6,	0.4	1.3	1.3	1.3
	F	0.4	0.4	1.7	1.7	79.3	0.5	0.3,	1.2	0.8	2.3
Ashanti	M	4.1	3.8	2.5	4.7	2.6,	82.3	5.4	6.5	6.7	6.9
	F	3.9	3.8	2.2	4.4	2.0	86.1	5.2,	4.1	3.8	3.9
B Ahafo	M	1.0	0.9	0.9	1.6	1.8	4.7,	88.4	4.8	4.9	5.1
	F	0.8	0.8	0.8	1.4	1.4	4.2	90.1,	3.1	2.8	2.9
North	M	0.4	0.4	0.6	0.4	0.9, 0.9		0.7	79.7	0.7	0.7

	F	0.3	0.3	0.5	0.3	0.6	0.7	0.6	86.5	0.6	1.3
U East	M	0.3	0.2	0.4	0.2	0.6	0.6	0.5	1.0	79.5	0.8
	F	0.1	0.1	0.2	0.1	0.3	0.3	0.3	0.9	89.5	1.7
U West	M	0.2	0.1	0.2	0.1	0.3	0.4	0.3	1.0	0.9	79.2
	F	0.2	0.2	0.3	0.2	0.5	0.6	0.5	1.1	0.7	82.3
All	M	100	100	100	100	100	100		100	100	100
Regions	F	100	100	100	100	100	100	100	100	100	100

Source: 1970 Population Census Data

V. Streams and Counterstream

Tables 14 and 15 also show that for each stream of migrants from one region to another, there is a compensatory counterstream from the second region to the first. In 1984 for example, 10.5 % of males and 9.6 % of females born in the Eastern Region were enumerated in the Greater Accra Region; This stream of migrants from the Eastern Region to Greater Accra is compensated by a counterstream of 7.0 % and 6.3 % of Greater Accra born males and females respectively who were found in the Eastern Region at the same time. A glance at the tables will reveal that this situation persists generally for all regions. In addition, any region which takes a substantial proportion of migrants from another region also gives a large proportion of its out-migrants to that region and so on. While 4.6 % of the males born in the Ashanti Region were enumerated in the Brong Ahafo in 1984, an equally high proportion of the males born in the Brong Ahafo Region, 5.4 %. were found in the Ashanti Region. With regards to the female population, 5.3 % of those born in Brong Ahafo were found in the Ashanti Region, while 4.1 % of Ashanti born females were enumerated in Brong Ahafo. So that table 14 shows that every region lost some of its people to its neighbours irrespective of the numbers of people involved in 1984.

It should further be pointed out that table 15 shows that streams and counterstreams were also existent in 1970, and that the situation was the same in 1960 as well. Again if a region takes a sizeable proportion of migrants from a specific region, it also loses a substantial proportion of its out-migrants to that region. 3.1 % of males and 3.0 % of females born in the Central Region werer enumerated in the Eastern Region in 1970; the corresponding proportions of males and females born in the Eastern Region, but enumerated in the Central Region were 2.9 % and 2.4 % respectively. Sometimes, the proportions are lower: 1.0 % of males and 0.9 % of females born in the Northern Region lived in the Upper East Region in 1970; these are compensated by 0.7 % of males and 0.6 % of females born in the Upper East Region who were enumerated in the Northern Region at the same time. The same is true for 1960.

In a way, this picture of stream and counterstream supports the view expressed by Ravenstein (1885 and 1889) and Lee (1966). The available data do not lend themselves to the detailed study of the composition of the counterstream. It is not evident from the tables whether or not return migration exists, for example. Nonetheless the contention that there is a large proportion of return migrants in counterstreams in Ghana may not be wrong, even though there is no statistical evidence to support it.

W. Migration Rates and Ratios

One area of much controversy in migration studies is the computation of rates and ratios. The controversy focuses on the denominator to be used in the computation of the rate or ratio, resulting in various researchers using various approaches (see, for example, Hamilton, 1965). What is done here is to use the various rates and ratios to study internal migration in Ghana, and to select an appropriate rate for the regression analysis.

According to the United Nations (1970), 'a migration rate is the number of migrants (or the number of migrations) related to the population that could have performed the migration during the given migration interval. Algebraically, the equation is

$$m = M/P \cdot K$$

where m = rate of migration for the specific period, M = number of migrants or number of migrations; P = population at risk; and K = constant usually 100 or 1000 The United Nations notes further that the selection of the appropriate base and the interpretation of the rates depend on the available data and the object of the analysis. On the basis of this, it is possible to compute a rate for the country as a whole, showing the proportion of the population which has moved from the locality or region of birth (table 16). Here the population at risk is the total population of the country and, since the number of migrants are used as the numerator,

Table 16 Proportion of Population Enumerated Outside the Region of Birth, Ghana, 1960-84

Year	% of Total Population
1960	34.0
1970	38.8
1984	39.7

Source: Data from 1960,1970,and 1984 Population Censuses

the rate may also be interpreted as a probability rate; the interpretation is that the probability of a person born in Ghana to move from the locality or region of birth was 34 % in 1960, 38.8 % in 1970, and 39.7 % in 1984. This shows further that the probability to move has been increasing over time. Regional out-migration rates are presented in table 17. The migration rates in this table are out-migration rates since they refer to people who were enumerated outside their region of birth.

Table 17 Out-Migration Rate, Regions of Ghana, 1960-84 (%)

Region	Out-Migration Rate		
of Birth	1960	1970	1984
Western	16.3	16.7	17.3
Central	13.3	20.1	19.3
G Accra	12.0	9.6	9.6
Eastern	16.1	25.2	25.7
Volta	17.6	25.3	26.1
Ashanti	9.8	14.3	14.7
B Ahafo	4.1	8.5	8.6
Northern	15.6	19.3	19.8
U East	16.1	16.7	16.9
U West	18.5	19.7	20.2

Source: Computed from appendices 5, 6, and 7

It is clear from the table that all regions recorded increasing out-migration rate during the study period, except Greater Accra. This also means that the probability for people to move outside their region of birth increased for all regions except Greater Accra. The Brong Ahafo Region recorded the lowest rates during the entire study period, 4.1 %, 8.5 %, and 8.6 % respectively for 1960, 1970, and 1984. The Volta and Eastern Regions experienced high out migration rates, while Greater Accra and Ashanti Regions recorded comparatively lower rates. 12 % of the people born in the Greater Accra Region were enumerated outside the region in 1960 and this decreased to 9.6 % in 1970 and 1984. In Ashanti the corresponding rates were 9.8 %, 14.3 %, and 14.7 % for 1960, 1970, and 1984 respectively, indicating moderate increases in the rates.

X. In-Migration and Net Migration Rates

United Nations (1970:41) asserts that 'for rates of net migration, the logical consistent base is the sum of the two areas concerned, ie the entire population of the country'. Well this is true if it is agreed that the base or denominator is the entire population at risk. If in-migrants and net migrants to the Northern Region are considered, for example, it is realised that the population at risk comprises the Northern regional population as well as the population of the other nine regions, as in-migrants have come from all the remaining regions. The problem with migration rates computed on such principles is that the rates obtained may also be interpreted as the propensity or probability to migrate, as already explained, resulting in a slight ambiguity in interpretation (see, also, Hamilton, 1965). It has also been argued that probability rates of in-migration, out-migration and net migration used as migration rates will be much lower in level.

What is done in this study is to use the population of each region as the denominator. This is because it is customary to regard in-migration, out-migration, and net migration as attributes of the given area, and base all three rates on that area's population (U N ,1970). In fact this approach is pratical, simple, convenient, and consistent with the technique used by several researchers in the literature (see, for example, Krishnan and Rowe 1978; Hamilton 1965; and Zachariah 1964). Another reason for using this approach is that the rates obtained are interpretable. The in-migration rate may thus be interpreted as the proportion of the region's population born outside that region.

In-migration rates are presented in table 18 and it is evident that Greater Accra continued to have the largest rates during the study period. The Northern Region recorded the lowest rates, while the other regions settled between these two extremes. In-migration rates for Greater Accra increased from 30.3 % in 1960 to 39.8 % in 1970, and 40.1 % in 1984, an increase of 32.3 % between 1960 and 1984. In-migration rates for the Northern Region was 4.9 % in 1960, 5.8 % in 1970, and 5.4 % in 1984. The Volta, Upper East and Upper West

Regions recorded relatively low rates; While the Volta Region's in-migration rates were 5.4 % in 1960, 7.5 % in 1970, and 8.1 % in 1984, the corresponding rates for Upper East and Upper West Regions were 3.5 % and and 4.2 % for 1960. 6.0 % and 10.4 % for 1970, and 6.0 % and 11.4 % for 1984, respectively for the two regions. Indeed in 1960 the lowest in-migration rate was recorded in the Upper East Region. It must also be mentioned that the Western and Central Region also recorded relatively large in-migration rates.

Table 18 In-Migration Rate, Regions of Ghana, 1960-84

Region	1960	1970	1984
Western	13.4	20.4	16.8
Central	15.5	16.0	17.7
G Accra	30.3	39.8	40.1
Eastern	14.4	17.0	17.0
Volta	5.4	7.5	8.1
Ashanti	18.5	19.2	19.5
B Ahafo	18.5	23.9	21.4
Northern	4.9	5.8	5.4
U East	3.5	6.0	6.0
U WEst	4.2	10.4	11.4

Source: Computed fron appendices 5, 6, and 7

According to table 19, Greater Accra experienced the largest net migration rate in 1960, 1970, and 1984, recording 18.3 %, 30.2 % and 30.5 % respectively for the three years. It is also clear that net migration rate for this region increased greatly between 1960 and 1970, and slowed down to near stagnation by 1984. Other regions which enjoyed relatively large net migration rates included Ashanti and Brong Ahafo. Sight should not be lost of the fact that the Ashanti Region recorded a rate of 8.7 % in 1960, but that this rate fell almost 50 % to 4.9 % in 1970 and 4.7 % in 1984. With regards to the Brong Ahafo Region, the net migration rate of 14.4 % recorded in 1960 increased slightly to 15.3 % in 1970 before falling below the 1960 rate to 12.7 % in 1984.

The lowest net migration rates were recorded in the Northern, Volta, Upper East, and Upper West Regions. Between 1960 and 1970, net migration rate in the Volta Region decreased from -12.2 % to -17.9 % and stayed that way for the 14-year period from 1970 to 1984. Similarly, in the Northern Region, net migration dropped from -10.7 % in 1960 to -13.5 % in 1970 and -14.4 % in 1984. In the Upper East Region, net migration rate increased from -12.6 % in 1960 to -10.7 % in 1970 and -10.9 % in 1984, while the rate for the Upper West Region was -14.3 %, -9.3 %, and -8.8 % for 1960, 1970, and 1984 respectively. So that the Upper Regions experienced some moderate increases in net migration rates during the study period, even though negative rates were recorded at all times.

Table 19 Net Migration Rate, Regions of Ghana, 1960-84

Region	Net Migration Rates (%)		
	1960	1970	1984
Western	-2.9	3.7	-0.5
Central	2.2	-4.1	-1.6
G Accra	18.3	30.2	30.5
Eastern	-1.7	-8.2	-8.7
Volta	-12.2	-17.9	-17.9
Ashanti	8.7	4.9	4.7
B Ahafo	14.4	15.3	12.7
Northern	-10.7	-13.5	-14.4
U East	-12.6	-10.7	-10.9
U West	-14.3	-9.3	-8.8

Source:Computed from appendices 5, 6, and 7

Y. Rates of Migration Streams

For rates of migration streams from one region to the other, the denominator is the population of the region of origin. Symbolically, this is represented as folows:

$$mij = Mij/Pi \cdot K$$

where mij is migration rate from region i to region j, Mij is number of migrants from region i to region j, Pi is population of the region of origin, i and K a constant of 100.

Table 20 shows rate of migration streams to Accra Region from the other regions of Ghana in 1960, and points out that the largest rate of 5.4 % was from the adjacent Eastern Region. Other large rates were for the streams from the Volta (4.0 %), Central (2.4 %) and Western (2.3 %). Low rates were recorded for the streams from Brong Ahafo (0.2 %), Ashanti (1.1 %), Northern, Upper East, and Upper West Regions which had a rate of 1.0 % each.

Table 20 Rate of Migration Streams to Greater Accra Region, 1960

Region of Origin	Number of Migrants	Population	Rate (%)
Western	14602	626155	2.3
Central	18161	751392	2.4
Eastern	58802	1094196	2.4
Volta	30925	777285	4.0
Ashanti	12231	1109133	1.1
B Ahafo	1178	587920	0.2
Northern	5514	531573	1.0
U East	4593	468638	1.0
U West	3019	288706	1.0

Source: Computed from Appendix 1

Rate of migration streams to the Central Region in 1960 from the other regions are shown in table 21. The largest rate was from the Western Region (6.3 %). Rates for streams from Eastern, Greater Accra, Volta, and Upper West were moderately large, 2.0 %, 1.6 %, 1.6 %, and 1.9 % respectively for the four regions. The lowest rate, 0.2 %, was for the stream from the Brong Ahafo Region.

Table 21 Rate of Migration Streams to the Central Region, 1960

Region of Origin	Number of Migrants	Population	Rate (%)
West	39661	626155	6.3
G Accra	7748	491817	1.6
East	21976	1094196	2.0
Volta	12187	777285	1.6
Ashanti	15193	1109133	1.4
B Ahafo	1156	587920	0.2
North	7813	531573	1.5
U East	6515	468638	1.4
U West	4278	288706	1.9

Source: Computed from Appendix 1

Rates of migration streams to the Western Region are presented in table 22. The largest rate of migration stream to the Western Region in 1960 was from the Central Region, 3.0 %. The stream from the Eastern Region was also relatively large, 1.6 %. With a rate of 1.3 %, the Greater Accra and Volta Regions took the third spot. The lowest rate, 0.2 %, was again from the Brong Ahafo Region (table 51). Rates for streams from Ashanti (1.1 %), Upper East (1.1 %) and Upper West (1.2 %) were among the lowest.

Table 22 Rate of Migration Streams to Western Region, 1960

Region of Origin	Number of Migrants	Population	Rate (%)
Central	22229	751392	3.0
G Accra	6230	491817	1.3
East	17662	1094196	1.6
Volta	9795	777285	1.3
Ashanti	12218	1109133	1.1
B Ahafo	931	587920	0.2
Northern	6310	531573	1.2
U East	5248	468638	1.1
U West	3466	288706	1.2

Source: Computed from Appendix 1

Table 23 shows that large rates were recorded for the streams to the Ashanti Region, with the largest rates being recorded for the streams from the Northern region, 5.4 %, Upper West, 5.5 %, and Upper West, 5.1 %. The migration stream from the Greater Accra Region recorded the lowest rate of 1.7 %. The rates were generally large here because the Ashanti region received substantial numbers of migrants from the other regions in 1960.

Table 23 Rate of Migration streams to Ashanti Region, 1960

Region of Origin	Number of Migrants	Population	Rate (%)
Western	21321	626155	3.4
Central	26595	751392	3.5
G Accra	8340	491817	1.7
Eastern	47152	1094196	4.3
Volta	16498	777285	2.1
B Ahafo	16215	587920	2.8
Northern	28957	531573	5.4
U East	24131	468638	5.1
U West	15857	288706	5.5

Source: Computed from Appendix 1

Rates of migration streams to the Eastern Region are found in table 24. It is evident from the table that the largest rate in 1960 was for the stream from the Volta Region, while the lowest rate was for the migration stream from Brong Ahafo Region. The rates for the streams from Greater Accra (5.3 %), Central (3.1 %) and Western (3.0 %) were also large. The rates for the streams from Ashanti, Northern, Upper East and Upper West were comparatively smaller.

Table 24 Rate of Migration Streams to Eastern Region, 1960

Region of Origin	Number of Migrants	Population	Rate (%)
Western	18608	626155	3.0
Central	23197	751392	3.1
G Accra	26050	491817	5.3
Volta	51763	777285	6.7
Ashanti	16298	1109133	1.5
B Ahafo	1509	587920	0.3
Northern	7843	531573	1.5
U East	7052	468638	1.5
U West	4635	288706	1.6

Source: Computed from Appendix 1

With regard to the Brong Ahafo Region, it is seen from table 25 that the largest rates were for the streams from the Volta (5.1 %), Northern (3.0 %), and Upper west(3.0 %). The Ashanti (0.6 %), Greater Accra (0.6 %), Western (0.7 %), and Central (0.7 %) recorded the lowest rates of migration streams to the Brong Ahafo Region.

Table 25 Rate of Migration Streams to the Brong Ahafo Region, 1960

Region of Origin	Number of Migrants	Population	Rate (%)
Western	4329	626155	0.7
Central	5389	751392	0.7
G Accra	3167	491817	0.6
Eastern	12395	1094196	1.1
Volta	39751	777285	5.1
Ashanti	6895	1109133	0.6
Northern	15697	531573	3.0
U East	13081	468638	2.8
U West	8596	288706	3.0

Source: Computed from Appendix 1

Rates of migration streams to the Volta Region in 1960 were generally low as indicated in table 26. The highest rate of 1.3 % was recorded for the streams from Eastern, Ashanti, Northern, and Upper West Regions. The stream from the Brong Ahafo Region recorded the lowest rate of 0.1 %, while the streams from Western (0.2 %), Central (0.3 %), and Ashanti (0.3 %) were among the lowest rates. The rates are low here because the Volta Region is a major migrant sending region.

Table 26 Rate of Migration Streams to the Volta Region, 1960

Region of Origin	Number of Migrants	Population	Rate (%)
Western	1555	626155	0.2
Central	1939	751392	0.3
G Accra	4369	491817	0.9
Eastern	14052	1094196	1.3
Ashanti	3446	1109133	0.3
B Ahafo	741	587920	0.1
Northern	6695	531573	1.3
U East	5580	468638	
U West	3666	288706	1.3

Source: Computed from Appendix 1

Rates of migration streams to the Northern, Upper East, and Upper West Regions were rather low. This is expected as these three regions are essentially migrant sending areas. In the Northern Region, table 27 shows that the highest rate for the migration streams to the region in 1960 was for the stream from the adjacent Upper West Region (2.2 %). The next higher rate of 1.3 % was recorded for the stream from the Upper East Region, while the streams from Western, Central, and Brtong Ahafo had a lower rate of 0.1 % each.

Table 27 Rate of Migration Streams to the Northern Region, 1960

Region of Origin	Number of Migrants	Population	rate (%)
Western	859	626155	0.1
Central	1069	251392	0.1
G Accra	1265	491817	0.3
Eastern	1702	1094196	0.2
Volta	3542	777285	0.5
Ashanti	3933	1109133	0.4
B Ahafo	613	587920	0.1
U East	5963	468638	1.3
U West	6460	288706	2.2

Source: Computed from Appendix 1

Rate of migration streams to the Upper East Region is presented in table 28. 1.2 % was the highest rate obtained by any migration stream to the Upper East Region from the othet regions, and this was recorded for the stream from the Upper West Region. The lowest rate of 0.1 was recorded for the streams from Western, Central, and Eastern.

Table 28 Rate of Migration Streams to the Upper East Region, 1960

Region of Origin	Number of Migrants	Population	Rate (%)
Western	717	626155	0.1
Central	889	751392	0.1
G Accra	1054	491817	0.2
Eastern	1419	1094196	0.1
Volta	2945	777285	0.4
Ashanti	3278	1109133	0.3
B Ahafo	928	587920	0.2
Northern	1656	531573	0.3
U West	3515	288706	1.2

Source: Computed from appendix 1

Rates of migration streams to the Upper West Region were generally the same as those of the neighbouring Upper East Region (table 29). The highest rate of 1.1 % was for the stream from the Upper East Region, while Greater Accra, Western, Central, Eastern, Ashanti, and Brong Ahafo all recorded the lowest rate of 0.1 %.

Table 29 Rate of Migration Streams to the Upper West Region, 1960

Region of Origin	number of Migrants	Population	(%)
Western	471	626155	0.1
Central	586	751392	0.1
G Accra	692	491817	0.1
Eastern	933	1094196	0.1
Volta	1939	777285	0.2
Ashanti	2155	1109133	0.1
B Ahafo	610	587920	0.1
Northern	1633	531573	0.3
U East	3132	468638	1.1

Source: Computed from Appendix 1

The pattern exhibited by the rates of migration for 1970 and 1984 were not very different from that of 1960. Volta, Northern, Upper East, and Upper West regions, which are major migrant sending areas recorded low rates. Greater Accra had very high rates because it is the leading migrant receiving region.

Z. Determinants of Internal Migration

As stated earlier, net migration is determined by social, economic, and demographic factors. The number of elementary schools per 100000 population aged 5-14 years is used to represent social factors, economic factors are represented by the refined economic activity rate, and demographic factors by the population growth rates. Refined economic activity rate is the proportion of the population aged 15-64 who are employed. the data used for the regression analysis are presented in appendices 57 and 58. According to the model, population growth affects education, which in turn affects employment which then determines net migration. Population growth also has a direct effect on net migration.

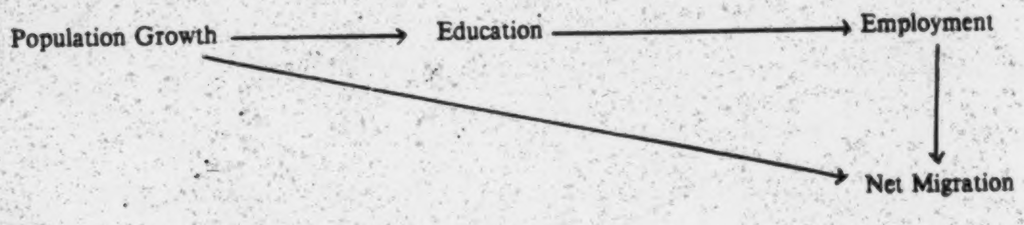
The initial results indicated a high degree of multiple correlations among some of the variables (see table 30). Such high correlations are common in a study like this, given the fact that the population variable is inherent in all the variables. The results of Beals, Levy and Moses (1966) attest to this. Two methods are available in the literature to resolve this problem, namely the elimination of one of the colinear variables and the combination of two or more of the predictor variables. It was evident that only the first provided acceptable correlation between the two remaining independent variables. Correlation between the two independent variables of employment and population growth drops to .645 when education is eliminated, as shown later in the study. The initial correlations also show that the formulation that population growth affects education, which

Table 30 Correlations among the variables in the Models

	V7	V10	V11	V12
Education (V7)	1.000	.744	.727	.683
Migration (V10)	.744	1.000	.725	.368
Employment (V11)	.727	.725	1.000	.645
Pop Growth (V12)	.683	.368	.645	1.00

Source: Regression Results

in turn affects employment which then affects net migration may not be completely true. The path diagram is as follows:



According to Blalock (1970), if the formulation is true, then the following equation must also be true:

$$r10\ r12 = r10\ r7 \times r7\ r11 \times r11\ r12$$

where $r10,12$ is the correlation between net migration and population growth, $r10\ r7$ is correlation between net migration and education,and $r7\ r11$ is correlation between education and employment and $r11\ r12$ is correlation between employment and population growth. So that if the equation is true, then

$$.368 = .744 \times .727 \times .645$$

But the product on the right side is .302

What this means is that the exact linkages as outlined above may not hold. However, the small nature of the difference, .066, also points to the need to be cautious in dismissing the proposed linkages. It should further be noted that this situation does not rule out the view that net migration is a function of social, economic and demographic factors as hypothsised in the study.

Despite this problem, the results testify that the three predictor variables do influence net migration (table 31). It is seen that education and economic activity explain over 52 % and over 55 % respectively of the variance in net migration.

Table 31 Bivariate Effects of the Predictor Variables

Variable	Slope	Variance Explained	Level of Significance
Education	.290610	.55382	.0000
Employment	1.924872	.52568	.0000
Pop Growth	.851614	.13529	.0455

Source: Author's computation

In addition, a unit change in the value of education and economic activity cause a change of .290610 and 1.924872 respectively in the value of net migration, and that these effects are statistically significant. Population growth explains only 14 % of the variance in net migration and this is statistically significant only at the .05 level. This means that people are attracted to areas where they can further their education or avail themselves of economic opportunities.

The direct effects of the three variables are more interesting, as shown in table 32. It is seen that over 70 % of the variance in net migration is explained by education, economic activity, and population growth, supporting the contention that net migration is a function of social, economic, and demographic factors in Ghana.

Table 32 Direct effects of the Predictors on Net Migration

Variable	Variance Explained R2	Slope (Beta)	Level of Significance
Education		.251952	.0008
Employment	.70	1.379382	.0035
Pop Growth		-.944520	.0126

Source: Regression results

More appropriate results are obtained when education is eliminated to reduce the effect of high correlations. The bivariate effects of the remaining predictors, economic activity and population growth are presented in table 33. A unit change in the value of economic activity causes a statistically significant change of 1.924872 in the value of net migration; the corresponding change in the value of net migration caused by a unit change in the value of population growth is .851614.

Table 33 Bivariate Effects of Employment and Population Growth on Migration

Variable	Variance Explained	Slope	Level of Significance
Employment	.52568	1.924872	.0000
Pop Growth	.13529	.851614	.0455

When the two variables are used together in the regression, 54 % of the variance in net migration is explained, indicating the variables are doing a good job in predicting net migration (appendix 56). Indeed, employment alone explains over 52 % of the variance in net migration. The direct effect of population growth on net migration when all the variables are entered in the equation is -.397177; and this supports the view that regions with high population growth rates are sending out regions, as indicating by the sign of the coefficient. The direct effect of employment on net migration was 2.218829, and the sign of the coefficient appeared in the direction hypothesised; ie regions with higher economic activity rates are major migrant receiving areas.

AA. Entropy Flows

Krishnan (1977:307) shows that the scientific concept of entropy can be applied in demography to study internal migration from place of birth data. The population of any place may be divided into those born in the place of enumeration and those born outside of the place of enumeration. Following Krishnan (1977), the first group may be reclassified as stayers and the seconded category as movers. We may further denote Ps for the proportion of the population classified as stayers, and Pm for the proportion of the population considered as movers. It follows then that for any region or country,

$$Ps + Pm = 1$$

According to this approach, the entropy of the stayer-mover distribution is

$$H2 = -\left[Ps \log Ps + Pm \log Pm\right]$$

or

$$Hn = -\sum_{i=1}^{n-1} Pm \log Pm - Ps \log Ps$$

This application of entropy will show the migration dividedness of the population. In other words, entropy denotes what proportion of the population consists of stayers, and what proportion is taken by movers. There is, therefore, no entropy when the population consists of only one group, say migrants alone. In practice, however, most populations consists of varying proportions of movers and stayers. Zero entropy means the entire population comprises stayers or movers alone, while large values of entropy points out that the population is more divided between migrants and non-migrants and that there is a large migrant proportion. The maximum value of the entropy measure is log n, where n is the number of mutually exclusive groups (Krishnan, 1977:307).

The main advantage of using entropy measure to study migration is that no need arises to get an estimate of population at risk. The conventional methods or measures of migration require data on volume of migration as well as base population, and there are problems with estimating the base population. There are also problems relating to whether to compute the conventional rates at the beginning or end of the period. Entropy measure requires only place of birth data indicating movers and stayers.

AB. National Level

The first formula is used to estimate entropy or the dividedness of the population at the national level. The results are represented in appendix 39. Zero entropy means that the population comprises of stayers, alone, and the low entropy values recorded for the male,and females of Ghana in 1960,1970, and 1984 indicate the extent to which the population comprises a large porportion of stayers.

AC. Regional Levels

The population of stayers and movers in the ten regions of Ghana for 1960,1970, and 1984 are presented in appendices 40 to 45. In 1960, The Upper East Region had the lowest entropy measure of 0.281 for males. This means that as far as the entropy method of estimating migration is concerned , this region has the male population which is least divided into movers and stayers as its entropy is closest to zero, and as zero entropy means the entire popultion comprises only one group, stayers. Other regions which exhibit features of unequally divided population include Upper West(0.3111) Northern (0.430) and Volta (0.520). Regions which showed characteristics of a population which is well divided between movers and stayers include Eastern (1.120), Ashanti (1.361) and Greater Accra (0.935).

With regards to the female population, Upper West recorded the lowest entropy of .0792, closely followed by the adjoining Upper Eastern region with an entropy of 0.795. Again, the Ashanti region recorded the highest entropy measure, indicating that its population is most divided between movers and stayers at that time. The population of Greater Accra and Central Region are also very well divided between movers and stayers as indicated in entropies of .731 and .707 for the two regions respectively. It is interesting to note that in 1960, the three lowest entropy measures have been recorded for the three Northern most regions--Northern, Upper East, and Upper West (fig 1). This it must be noted, is true for both males and females.

This pattern did not change in 1970 and 1984. The three northernmost regions continue to take the lowest entropy values for both males and females. In 1970, the Upper West recorded the lowest value for males and second lowest value for females. Upper East recorded second lowest value for males and the lowest value for females, while the Northern Region recorded the third rank for males and females. This pattern was virtually the same in 1984. So that for almost two and a half decades, entropy flows did not change much in Ghana,with the northern most regions recording the lowest entropy measures.

Greater Accra which is the leading migrant recieving region contains a population which is very divided between movers and stayers, especially in 1984,as it recorded some of the highest entropy measures. These results are consistent with the ones provided earlier from other methods.

AD. Migration Inequality

Krishnan (1977;308-309) extends the notion of income inequality to migration studies. If n represents the number of regions in Ghana, and if pi and qi are the respective population and migration shares of the ith region, then migration inequality Mn is obtained by

$$Mn = \sum_{i=1}^{n} qi \log qi/pi$$

A large volume of Mn means that a high degree of inequality exists and Mn can also be positive or negative. If Mn is positive it means that overall the migration shares are in excess of the population shares,while negative Mn means migration shares are less than the population shares. In addition, inequality arises if the migration and population shares are incompatible. A glance at appendices 46 to 48 indicate that the migration and population shares of the regions of Ghana are not compatible during the period.

The results are rather interesting. Very small Mn values are obtained for1960, 1970 and 1984. In 1960 an Mn value of .065 was obtained, this means that migration shares exceeded population shares in that year but the small value points out further that the excess of migration shares over population shares are rather small. Similarly in 1970 a small Mn value of .081 was obtained indicating a slight increase in Mn value after ten years, and showing also that migration shares continued to exceed population shares, and that small degree of migration inequality exists in the country. By 1984, the situation changes. A negative Mn value of -.051 is obtained indicating an excess of population shares over migration shares; so that migration inequality is found to exist throughout the entire study period, as migration shares are found to be incompatible with the popultion shares for each census year.

AE. Migration Estimates from Balancing Equation

It has already been mentioned that the use of balancing equation in estimating internal migration in Africa is extremely difficult due to the paucity of vital statistics. Many researchers have used this method to estimate internal migration elsewhere (see, for example, Rogers,1965) Even though exact data in fertility and mortality are not available,it has been possible to obtain some estimates from Gaisie and de Graft-Johnson (1976:14) and the writer's own knowledge of the Ghanian society (appendix 49). North family life tables are used here also. The basic equation in this balancing equation approach is

$$P2= P1 + (B-D) + \text{Net Migration}$$

and

$$\text{Net Migration}= P2 - P1 -(B-D)$$

Where P2 is population at second census year, P1 is population at first census year, B births, and D deaths

The results are presented in Appendix 50 for 1960-70 and Appendix 51 for 1970-84. The results are similar in pattern to the estimates from the life table survival ratio method. With the exception of Greater Accura, all the remaining regions lost migrants during the 1960-70 and 1970-84 periods. In fact while most regions lost more migrants in this method, Greater Accra gained more migrants than in the life table estimates.

VI. Chapter Six: Population Redistribution

A. Introduction

This chapter provides an analysis of the changes in the distribution of population for the country as a whole, and for the ten administrative regions from 1960 to 1984. It goes without saying that the distribution of human population within individual countries is uneven. Also changes in the geographical distribution of the population in Ghana as in many other countries, are discernible even over a relatively short period of time, and this is evident from the censuses of 1960, 1970, and 1984. The chapter also deals with urbanisation in Ghana and examines the nature, process and pattern of urbanisation from 1960 to 1984. The problems of urbanisation and the determinants of urbanisation are also considered.

B. Total National Population

The population of Ghana is growing very rapidly. For the country as a whole, the population was 12,205,574 in 1984, as compared with 8,559,313 in 1970, and 6,726,815 in 1960. This shows a percentage change of 42.6 during 1970 and 1984, and 27.2 from 1960 to 1970. These high percentage changes in population translate into correspondingly high annual growth rates(table 34).

Table 34 Total Population, Ghana, 1960-84

Year	Population	% Change	Annual Growth Rate (%)
1960	6726815	-	
1970	8559313	27.2	2.4
1984	12205574	42.6	2.6

sources: Census Reports of 1960 and 1970

Preliminary Report of the 1984 Census

The annual growth rate of population was 2.4 % during the 1960-70 period and this increased to 2.6 % between 1970 and 1984 (Ghana Central Bureau of Statistics, 1984: 54). This has serious implications for population policy in the country. At a time when much effort continues to be put into the reduction of fertility and growth rate, an increasing population growth rate is most undesirable.

C. Regional Distribution of Population

Table 35 shows a steady increase in the population of the ten administrative regions of Ghana (see also figure 9). This is expected as the total population for the country has been increasing rapidly, and as an aggregate of the regional population constitutes the total national population. Table 35 also presents the regional distribution of population and the percentage changes in regional population during the study period. The regional distribution of population for 1970 is represented in figure 10, while the distribution for 1984 is shown in figure 11.

Fig 9. Regional Distribution of Population, 1960

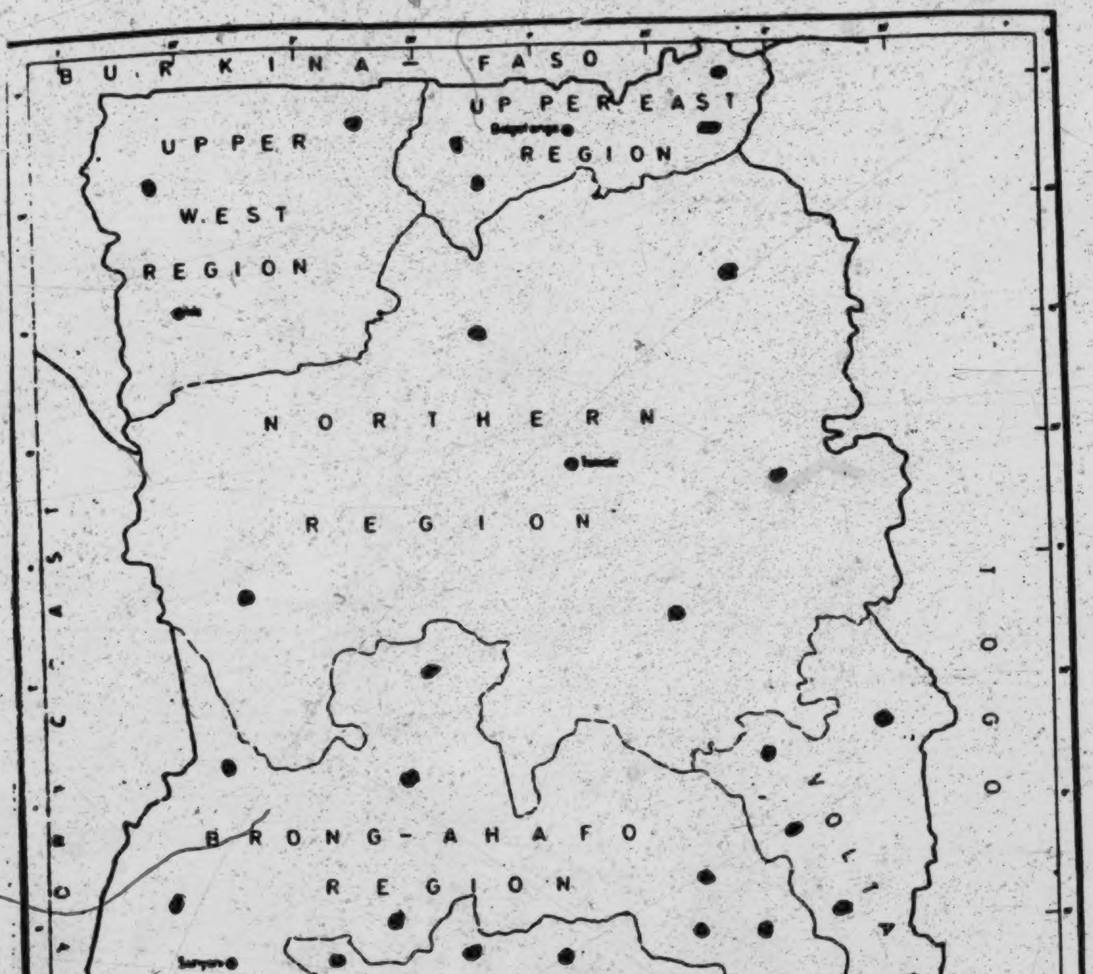

BURKINA FASO
UPPER EAST REGION
UPPER WEST REGION
NORTHERN REGION
BRONG-AHAFO REGION
Sunyani
ASHANTI REGION
EASTERN REGION
Koforidua
VOLTA REGION
Ho
TOGO
IVORY COAST
WESTERN REGION
CENTRAL REGION
GREATER ACCRA REGION
ACCRA
Cape Coast
GULF OF GUINEA
GHANA
● = 100000

Fig 10. Regional Distribution of Population, 1970

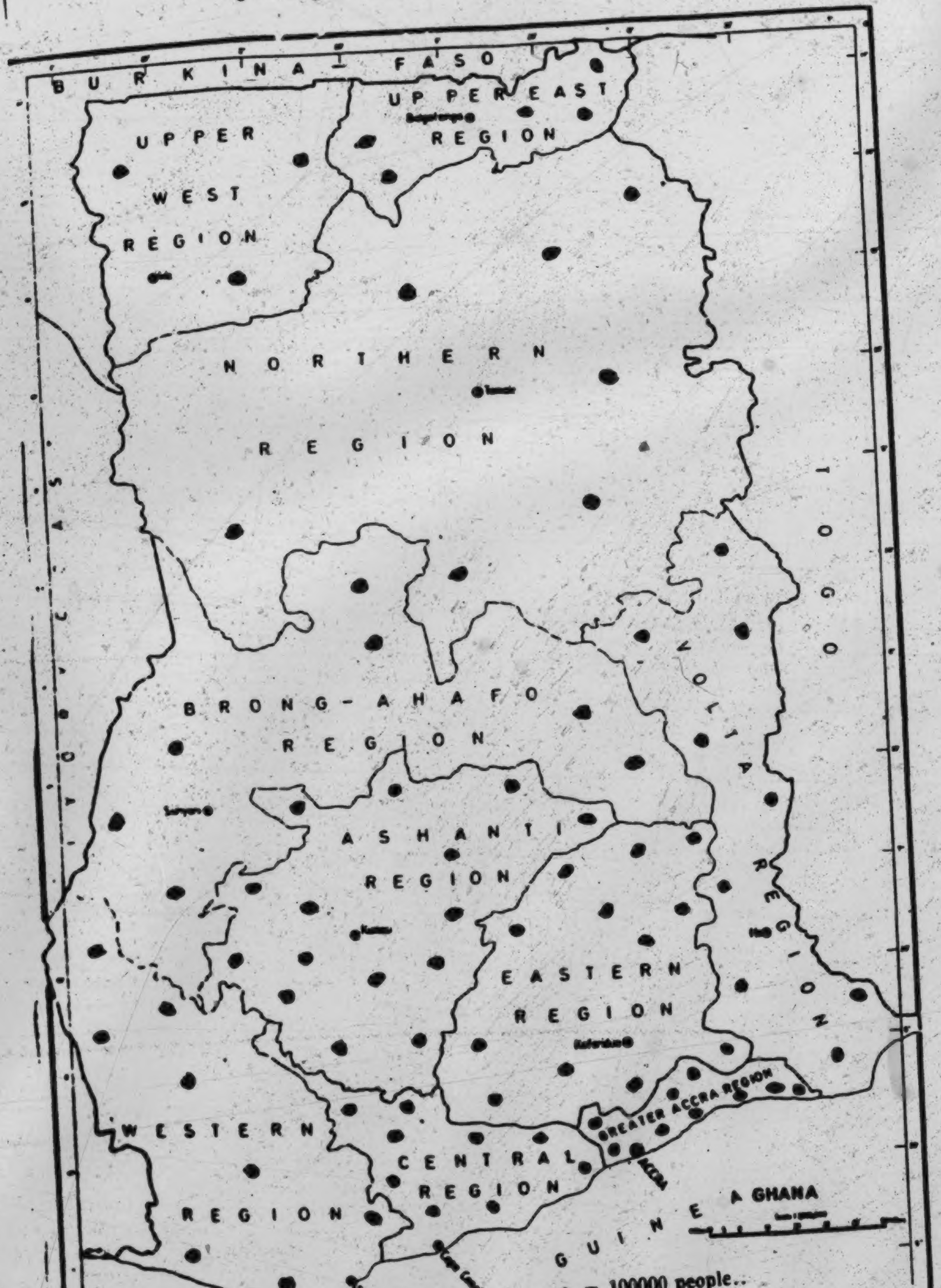

BURKINA FASO
UPPER EAST REGION
UPPER WEST REGION
NORTHERN REGION
TOGO
BRONG-AHAFO REGION
VOLTA REGION
ASHANTI REGION
EASTERN REGION
GREATER ACCRA REGION
ACCRA
WESTERN REGION
CENTRAL REGION
GHANA
GULF OF GUINEA
● = 100000 people..

Fig 11. Regional Distribution of Population, 1984

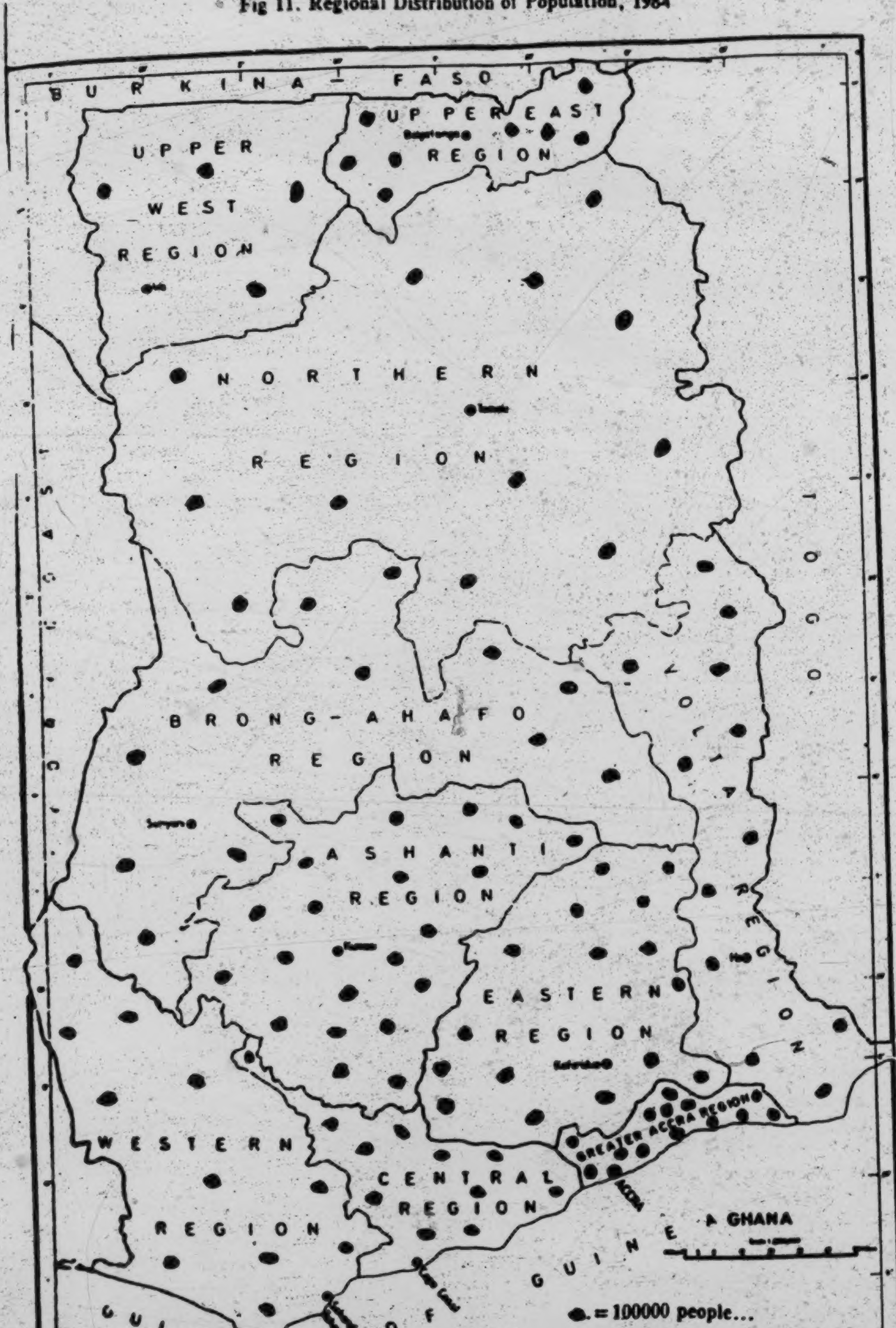

BURKINA FASO
UPPER EAST REGION
UPPER WEST REGION
NORTHERN REGION
BRONG-AHAFO REGION
ASHANTI REGION
EASTERN REGION
VOLTA REGION
GREATER ACCRA REGION
CENTRAL REGION
WESTERN REGION
COAST
TOGO
GULF OF GUINEA
GHANA
● = 100000 people...

Table 35 Regional Distribution of Population, Ghana, 1960-84

Region	1960	1970	% Change 1960-70	1984	% Change 1970-84
Western	753403	770087	23.0	1116030	45.0
Central	625594	890135	42.3	1145520	28.7
G Accra	544872	903447	65.8	1420066	57.2
Volta	780311	947268	21.4	1201095	26.8
Eastern	1042656	1209828	16.0	1679483	38.8
Ashanti	1103198	1481698	41.0	2089638	41.0
B Ahafo	585233	766509	31.0	1179407	53.9
Northern	531418	727618	36.9	1162645	59.8
Upper West	289253	319865	10.6	439161	42.1
Upper East	470877	542858	15.3	771584	42.1
Ghana	6726815	8559313	27.2	1205574	42.6

Sources: Computed from 1960 and 1970 Census Reports;
Preliminary Report of the 1984 Census

It is worthy to note that the highest percentage change in population during the 1970-84 period, 59.8, was recorded for the Northern region. This is because this region is traditionally noted for sending out migrants to southern regions, and is thus not expected to make striking gains in population (Goldscheider, 1971). The opening up of the Northern region for grain production and other activities may be responsible for the large percentage change in population. The Northern Region is today considered the granary of Ghana, where the bulk of the country's grains is produced. Many of the owners of farms, especially the large rice plantations are from elsewhere in the country. Greater Accra recorded the next highest percentage change of population, 57.2, followed by Brong Ahafo, 53.9, and Western 45.0. These compare favourably with the national average of 42.6 %. The percentage change was lowest in the Volta region, 26.8; the population in the Central, Upper West, and Eastern increased steadily by 28.7 %, 37.3 %, and 38.8 % respectively, relatively lower percentage changes than the national average. During the 1960-70 period, the highest percentage changes were Greater Accra, 66.0, Central, 42.0, and Ashanti, 41. The lowest percentage change was 10.6 and this was for the Upper West region; other lower increases were Upper East, 15.3, Eastern, 16.0, and Western, 23.0, as compared with the national average of 27.2 %. It is interesting to learn that the population of the Western Region increased dramatically from 1970 to 1984. The percentage change in population increased from 23 during 1960-70 to 45 between 1970 and 1984. The explanation for this is that until the late 1960s, this was basically a heavily forested zone with many unexploited mineral, agricultural, and forestry resources. The late 1960s and the 1970-84 period saw the opening up of the region for agricultural, mineral, forestry and other exploitation, which tended to attract many people to the region. Today, the region has some of the country's most viable gold mines (at Tarkwa and Prestea), iron ore (at Uponkrom), manganese (at Nsuta), and oil exploration (along the coast). It has a number of manufacturing establishments, lumber ventures, and contains the nations third largest city of Sekondi-Takoradi.

It must further be noted that Greater Accra, the most developed region in the country, experienced a decrease in percentage change from 66 % during 1960-70 to 57 % between 1970 and 1984. This is due to the fact that other regions started opening up for settlement and exploitation during this time. The total effect of this was to slow down movements of people to Accra, as the new education emphasised local crafts and industries. The idea was to provide school graduates with skills which could mainly be used in the locality where the school is situated, so as to prevent them from moving to Accra where the social, the economic, and the cultural institutions may be different. Greater Accra Region's share of the national population declined by 9 percentage points from 66 % during 1960 and 1970 to 57

% in 1970 to 1984. The United Nations (1979) explains that during the latter period, the Government of Ghana enacted and implemented laws and established projects aimed at diverting or restraining unwanted movements to the Greater Accra Region. The projects included rural industrialisation and development programs and the general spreading out of manufacturing firms to less developed regions. In addition, a large number of schools were built throughout the country, and a new structure and content of education was introduced in 1974. This new system of education stressed practical training in the primary schools, with particular emphasis on the craft and main economic activity in the region where the school is located. It was hoped that the new structure and content of education may enable pupils to have a sense of belongingness to their immediate communities by taking active parts in local festivals, cultural and economic activities, and by undertaking communal labour. These measures were intended to make it difficult for school graduates to move to the Greater Accra region where the cultural, economic and related activities have been different from those of most of the other regions.

The higher percentage change for the Northern region during the 1970-84 period is due mainly to the opening up of the region for agricultural and other economic activities. This region is the grain zone of Ghana with the bulk of the country's rice, millet, sorghum, and cattle being produced here. Many of the large scale rice projects in this region have received international support, especially from the Canadian International Development Agency and the International Monetary Fund.

The proportion of each region's population as a percentage of the country's total population is presented in table 36.

Table 36 Regional Distribution of Population, Ghana, 1960-1984

Region	1960 per cent	1970	Index of Dissimilarity 1960-70	1984	Index of Dissmilarity 1970-84
Western	11.2	9.0	2.2	9.2	
Central	9.3	10.4	-	9.4	1.0
G Accra	8.1	10.6	-	11.6	
Eastern	15.5	14.1	1.4	13.8	0.3
Volta	11.6	11.1	0.5	9.8	1.3
Ashanti	16.4	17.3	-	17.1	0.2
B Ahafo	8.7	9.0	-	9.7	
Northern	7.9	8.5	-	9.5	
U East	7 0	6.3	0.7	6.3	
U West	4.3	3.7	0.6	3.6	0.1
Total	100.0	100.0	5.4	100.0	2.9

Source: Computed from 1960, 1970 and 1984 Census Reports

A glance at the table reveals that the proportion of the national population found in the regions varied greatly during the study period. The Ashanti region continues to have the largest proportion, 16.4 % in 1960, 17.3 % in 1970, and 17.1 % in 1984. Even so, this region's share of the total national population dropped slightly between 1970 and 1984. Only three regions--Northern, Brong Ahafo and Greater Accra--experienced a steady increase in their share of the national population during the study period. For example, Greater Accra's proportion increased from 8.1 % in 1960 to 10.6 % in 1970, and 11.6 % by 1984. Thus, the proportion of the country's population found in the Greater Accra region increased by 43 % during the study period. Another set of three regions--Volta, Eastern, and Upper West--experienced a steady decline in their proportion of the total national population, while the Upper East Region recorded a drop between 1960 and 1970, but maintained the 1970 proportion in 1984. The most significant decrease was in the Eastern region where the proportion declined from 15.5 % in 1960, to 14.1 % and 13.8 % in 1970 and 1984 respectively. It must be noted that even though the Eastern region recorded a decline of over 2 percentage points during the study period, the proportion of the national population found in this region was second only to the Ashanti region. The remaining three regions did not exhibit any clear pattern in their share of the national population. The Western region recorded an initial decline of 2 percentage points during 1960 and 1970, and an insignificant increase of a fifth of a percentage point in 1984. The pattern in the Central region was the opposite of what has just been described for the Western Region. There was an increase from 9.3 % in 1960 to 10.4 % in 1970, before declining to 9.4 % in 1984.

One may also like to examine whether the distribution of population has changed over time. The index of dissimilarity is shown in table 36. The index of dissimilarity denotes changes in the spatial distribution of population over time. A large index points to major changes in population distribution, while a small index means that the distribution of population has not changed much over time. These indexes are indeed small, 5.4 % between 1960 and 1970, and 2.9 % between 1970 and 1984 distributions. One has to conclude that the distribution of population by regions has not change significantly in the 1960-84 time span.

D. Density of Population

For the country as a whole, the density of population--defined as the number of persons per square kilometre--was 28.0 in 1960, 36.0 in 1970, and 51.0 in 1984. The density of population in Ghana, thus, almost doubled during the study period. Corresponding to the trend for the country as a whole, the regions also experienced a steady increase in population density during the study period (table 37).

Table 37 Population Density by Region, Ghana, 1960-84

Region	Density Per Sq Km		
	1960	1970	1984
Western	26.0	32.0	47.0
Central	76.0	88.0	117.0
G Accra	167.0	278.0	438.0
Eastern	54.0	63.0	87.0
Volta	38.0	46.0	58.0
Ashanti	45	61	86
B Ahafo	15	19	30
Northern	8.0	10.0	17
U East	53	61	87
U West	16	17	24
National	28	36	51

Source: Preliminary Report of the 1984 Population Census

Greater Accra Region continues to have the highest population density--167.0 in 1960, 278.0 in 1970, and 438.0 in 1984, an increase of over 271 percentage points during the study period. The second highest density is found in the Central Region--76.0 in 1960, 88.0 in 1970, and 117.0 in 1984, an increase of 51 percentage points from 1960 to 1984. Brong Ahafo, Northern, and Upper West Regions recorded the lowest densities. With its vast area of over 70,300 Square kilometres, the Northern region's density was only 8 persons per square kilometrein 1960, 10 in 1970, and 17 in 1984. On the other hand, it is true that the highest densities have been recorded in the Greater Accra Region which has the smallest area of only

3245 square kilometres. It must, however, be mentioned that no strong positive relationship may be established between population density and region in Ghana during the study period. For example, the Upper West Region with the second smallest area, has a lower density than the Eastern and Central Regions. In addition, it must be noted that even though the Northern Region recorded the lowest densities, population density in this region more than doubled between 1960 and 1984. In 1984, six regions had higher population densities than the national average; regions in this group are Greater Accra, Central, Eastern, Volta, Ashanti, and Upper East. Western, Brong Ahafo, Northern, and Upper West regions recorded lower population densities than the national average.

E. Age-Sex Composition of the Population

The distribution of the population by age and sex from 1960 to 1984 are shown in table 38. It is evident that Ghana has a very young population. In 1960, 49.4 % of the population was under 15 years of age and this decreased to 44.4 % by 1984, indicating a broad based pyramid (figs 4 to 6). this also presupposes that there is a persistence of high fertility. In 1960, 52.5 % of the population was in the 15-64 age group, and this proportion decreased to 51.3 % in 1984. This gives a youth dependency ratio of 83 per 100 in 1960 and 88 per 100 in 1984. The proportion of population aged 65 or more years was 3.2 % in 1960 and this increased to 4.1 % in 1984, yielding an old age dependency ratio of 3 per 100 in 1960 and 8 per 100 in 1984.

One may also want to examine some demographic aspects of agying. In 1960 3.2 % of the population aged 65 years or more, while the corresponding proportion for 1984 was 4.1 %. So that, according to the United Nations coefficient of old age, Ghana's population was young in 1960 and mature in 1984. Despite this asertion, it should be noted that Ghana's population is still very young since the proportion of 4.1 % in the old age category is just 0.1 % above the limit for young population. In addition, it should be noted that for the 24 year period in the study, the proportion of the population aged 65 years and over changed by less than one percentage point.

Table 38 Age-Sex Structure of the Population, Ghana, 1960 to 1984 (%)

Age Group	Male 1960	1984	Female 1960	1984
0-4	9.5	8.3	9.6	8.3
5-9	7.7	8.3	7.5	8.0
10-14	5.3	6.3	4.8	5.9
15-19	4.1	5.2	3.9	5.0
20-24	4.0	3.9	4.8	4.7
25-29	4.1	3.5	4.6	4.2
30-34	3.6	2.9	3.7	3.2
35-39	2.9	2.3	2.7	2.5
40-44	2.5	1.8	2.2	2.0
45-49	1.8	1.8	1.4	1.7
50-54	1.4	1.4	1.2	1.5
55-59	0.9	0.9	0.7	0.9
60-64	0.9	0.9	0.8	1.0
65+	1.7	2.0	1.5	2.1

Source: 1960, 1970, and 1984 Census Data

VII. Urbanisation

A. Introduction

This chapter presents the salient demographic aspects of urbanisation in Ghana during the study period. The uneven distribution of the world's population is increasingly resulting in regional and urban polarization. There is regional polarization as particular regions especially south east Asia including China continue to account for disproportionate shares of the world's population. Over 61 % of the world's population lives on 8.5 % of the earth's area. In Ghana any settlement of 5000 or more people is classified as urban, and urbanisation occurs as the proportion of population classified as urban increases. Davis and Golden (1957) use 100,000 people as the limit for urbanisation. A threshold of 5000 people is used here because this is the oficial figure for the country as designated by the government and the United Nations. Besides this figure has been used by all researchers working on Ghanaian migration and the study is, thus, consistent with the literature. It should, however, be noted that we are not able to understand some of the social aspects of migration.

We study here the number and size of urban settlements, the proportion of population classified as urban, and the projection of these proportions to the year 2000, as well a study of the effects of population growth and especially net migration on urbanisation. The problems of urbanisation in Ghana are briefly discussed, and some solutions to the problems are also suggested.

B. Number of Urban Settlements

The number of urban settlements in Ghana increased from 98 in 1960 to 133 in 1970 and 189 in 1984, an increase of 98.9 % during the study period. It is interesting to note that the increase was higher during 1970-84 period than during the 1960-70 period. 58 new urban settlements came into being between 1970 and 1984, as compared with 35 new towns during 1960 and 1970. This larger increase in the latter half of the study period indicates that rapid urbanisation has been taking place in the country as a whole in recent times.

Regional distribution of urban settlements in 1960, 1970, and 1984 is presented in table 39. The Eastern Region obtained the largest number of towns during the study period. It had 19 towns in 1960, 29 in 1970, and 38 in 1984, an increase of 100 % during the entire study period.

Table 39 Regional Distribution of Urban Settlements, Ghana, 1960-84

Region	1960	1970	1984	% Increase 1960-84
Western	10	13	15	50.0
Central	19	21	25	31.6
G Accra	6	8	11	83.3
Eastern	19	29	38	100.0
Volta	11	14	24	118.2
Ashanti	12	17	26	116.7
B Ahafo	14	20	29	107.1
Northern	4	8	16	200.0
U East	2	2	2	0.0
U West	1	1	3	200.0
Total	98	135	189	92.9

Source: 1960 and 1970 census reports, and the preliminary report of the 1984 census

Even though the Eastern Region recorded the largest number of towns, the Northern and Upper West Regions gained the largest percentage increase of 200.0; the increase for the Eastern Region was only 100 %. The Central Region tied with the Eastern Region with 19 towns in 1960, and recorded the second largest number of towns, 21, in 1970. By 1984, it has fallen to fourth position after Eastern, Brong Ahafo, and Ashanti. It must be pointed out that the three northernmost regions--Northern, Upper East, and Upper West--recorded the lowest number of towns from 1960 to 1984. Indeed, the Upper West Region recorded only one town in 1960 and 1970, and this increased slightly to three by 1984. The number of towns in the Greater Accra Region was also small; the region had 6 towns in 1960, and this increased to 8 in 1970 and 11 in 1984.

While the percentage increase in the number of towns for the country, as a whole, was 92.9 during the study period, the Northern Region had a 200 % increase, Ashanti (116.7 %), Volta (118.2 %), and Brong Ahafo (107.1 %). The Upper East experienced no change in the number of towns, while the Western and Central Regions had moderate increases of 50.0 % and 31.6 % respectively between 1960 and 1984. A clear trend is that the regions which had a large number of towns in 1960, continued to have larger number of towns in 1970 and 1984. Notable regions, in this respect, include Eastern, Ashanti, and Brong Ahafo. On the other side, the regions which had few towns in 1960, had a small number of towns by the end of the study period in 1984. Another outstanding feature of the regional distribution of towns in Ghana is that the number of towns in the Upper East region did not change over the 24-year period from 1960 to 1984, as already mentioned. It is further interesting to learn that the Greater Accra Region, which recorded the highest urban proportion, had only 6, 8 and 11 towns in 1960, 1970, and 1984 respectively. This is explained by the fact that the large urban population is disproportionately concentrated in the cities of Accra and Tema.

C. Size of Urban Settlements

Tables 40, 41,71, and 42 portray the pattern exhibited by the size of urban settlement in Ghana from 1960 to 1984. It also provides a useful indication of how the settlements are growing in size. As shown in table 40, many towns increased in population size, as the number of towns in the various size categories increased over time. In 1960, when the Republic of Ghana came into being, there was no town with 500,000 or more people. Only two towns, Accra and Kumasi had a population over 100,000, while 96 towns recorded population of between 5000 and 50,000. Accra had a population of 337800 and kumasi a slightly lower population of 260300 in that year. The number of towns in the 5000 -50,000 category increased to 127 in 1970, and 179 by 1984, an increase of over 86 %. It should be noted that it was not until 1970 that the population of Ghana's capital and largest city, Accra, reached 500,000.

Table 40 Urban settlements by Size, Ghana, 1960-84

Settlement Size	1960	1970	1984
5000-50000	96	127	179
50000-100000	0	4	7
100000-500000	2	2	2
over 500000	0	1	1

Source: Data from 1960, 1970, and 1984 censuses

Table 40 shows, further, that in 1960, there was no town with population between 50000 and 100000, but by 1970, four of the ten largest towns were in this category, and this increased to seven by 1984. In addition, sight should not be lost of the fact that only Accra and Kumasi had a population of over 100000 during the most parts of the study period. Even though new towns were developing and existing ones growing, the growth was not adequate enough to result in the establishment of very big towns and cities. It is, indeed, interesting to realise that despite the rapid urbanisation taking place in the country, Accra has been the only city with a population of over 500000.

The Regional Distribution of urban settlements by size in 1960 is found in table 41. According to the table, Eastern and Central Regions recorded the largest number of urban settlements in 1960, obtaining 19 towns each. Brong Ahafo followed with 14, Ashanti 12, and Volta 11 as well. Three regions--Central, Eastern, and Brong Ahafo-- together accounted for over 53 % of all the towns in the country in that year. It is also evident that there is a concentration of towns in the southern regions. 77 % of the urban settlements in Ghana in 1960 was concentrated in western, Ashanti, Greater Accra, central and Volta, all in southern Ghana(Fig 1).

Table 41 Urban Settlements by Size and Region, Ghana, 1960

Region	Size of Urban Settlement				
	5-50000	50-100000	100-500000	500000+	Total
Western	10	0	0	0	10
Central	19	0	0	0	19
G Accra	5	0	1	0	6
Eastern	19	0	0	0	19
Volta	11	0	0	0	11
Ashanti	11	0	1	0	12
B Ahafo	14	0	0	0	14
North	4	0	0	0	4
U East	2	0	0	0	2
U West	1	0	0	0	1

Source: compiled from 1960,1970,and 1984 census data

Only little change occurred in the distribution of settlements by size and region in 1970. The number of towns with population between 50000 and 100000 increased by 32 % from 96 in 1960 to 127 in 1984. Eastern Region continued to have the largest number of towns (29), followed by Central (21), Brong Ahafo (20), and Ashanti (17), as shown in table 42.

Table 42 Urban Settlements by Size and Region, Ghana, 1970

Region	Size of Urban Settlement				
	5-50000	50-100000	100-500000	500000+	Total
Western	12	1	0	0	13
Central	20	1	0	0	21
G Accra	6	1	0	1	8
Eastern	29	0	0	0	29
Volta	14	0	0	0	14
Ashanti	16	0	1	0	17
B Ahafo	20	0	0	0	20
North	7	1	0	0	8
U east	2	0	0	0	2
U West	1	0	0	0	1

Source: compiled from 1960, 1970, 1984 census data

It is rather interesting that the Upper West Region recorded no new settlements with 5000 or more population in 1970, and continued to have only one town. Even though there was an increase in the number of towns in most regions, Accra and Kumasi continued to be the only towns with over 100000 people. The number of towns in the Western Region increased from 10 to 12, Central from 19 to 20, Greater Accra from 6 to 8, Eastern from 19 to 29, Ashanti from 12 to 17, and Brong Ahafo from 14 to 20. It must also be mentioned that the number of towns in the Northern Region doubled from 4 to 8, while Greater Accra only managed a modest addition of two new towns. Over 87 % of the towns in 1970 was found in the southern regions, an increase of 10 percentage points over the 1960 proportion. There was virtually no change in the proportion of towns in the Central, Brong Ahafo, and eastern regions in 1970, 52.6 % as compared with 53 % in 1960. So that the pattern exhibited by the concentration of towns in particular experienced no change during the 10-year period from 1960 to 1970.

Table 43 shows the distribution of urban settlements by region and size in 1984.

Table 43 Urban Settlements by Size and Region, Ghana, 1984

Region	5-50000	50-100000	100-500000	500000+	Total
Western	14	1	0	0	15
Central	24	1	0	0	25
G Accra	8	2	0	1	11
Eastern	37	1	0	0	38
Volta	24	0	0	0	24
Ashanti	23	2	1	0	26
B Ahafo	29	0	0	0	29
North	15	O	1	0	16
U East	2	0	0	0	2
U West	3	0	0	0	3

Source: compiled from 1960, 1970, and 1984 census data

The number of urban settlements increased to 189 in 1984. In terms of numbers, the Volta Region recorded the highest increase, adding ten new towns to its 1970 figure. Brong Ahafo added 9 new towns, Northern 8, Eastern 8, and Ashanti 7. There was no change in the number of of towns in te Upper East region , while the Upper West Region and the Western Region managed a modest increase of 2 new towns. Between 1970 and 1984, the number of towns with population 50000-100000 had increased by 25 %. Greater Accra and Ashanti had two towns each with population in this category. Even as recent as 1984, only Greater Accra had a city with population over 500000, ie Accra. A notable departure from the 1960 and 1970 years is that Brong Ahafo, Central, and Eastern--the three regions which accounted for over 50 % of the towns in 1960 and 1970, contained only 48.7 % of the towns, a drop of 4 percentage points from the 1970 proportion. Perhaps this decline in proportion is due to the opening up of such regions as Northern for exploitation and development which led to the development of 8 new towns in that region. Despite this assertion, the proportion of urban settlements in the southern regions increased to 88.9 %. The trend is, therefore, clear; there is more and more concentration of urban settlements in the southern regions, since the proportion of the country's settlements concentrated in that region increased from 77 % in 1960 to 87 % in 1970 and 89 % in 1984. This is explained by the distinct bias in the provision of socio-economic amenities and infrastructure in favour of the southern regions. More and more people have been drawn to the southern regions to take advantage of the availability of educational, employment and related opportunities. This shows that the push-pull theory is applicable in Ghana as people are attracted to areas with educational and employment opportunities. These opportunities serve as forces of attraction as described in the push-pull theory.

D. Rank-Size Distribution of Urban Settlements

Hauser and Schnore (1965) acknowledge that one of the most useful ways of studying the distribution of cities is to examine the rank-size distribution of cities within individual countries. A rank-size distribution of the ten largest cities in Ghana in 1960 is presented in table 44. The first two positions have been taken by Accra and Kumasi, the settlements with the largest agglomeration of population in the country. In 1960, Cape Coast occupied the third position while the port city of Takoradi placed fourth, Tamale fifth, and Koforidua, Sekondi, Winneba, Obuasi, and Nsawam followed in decending order of magnitude. It is rather necessary to note that with the exception of Tamale, all the other nine urban centres were located in the southern regions of Ghana (fig 12).

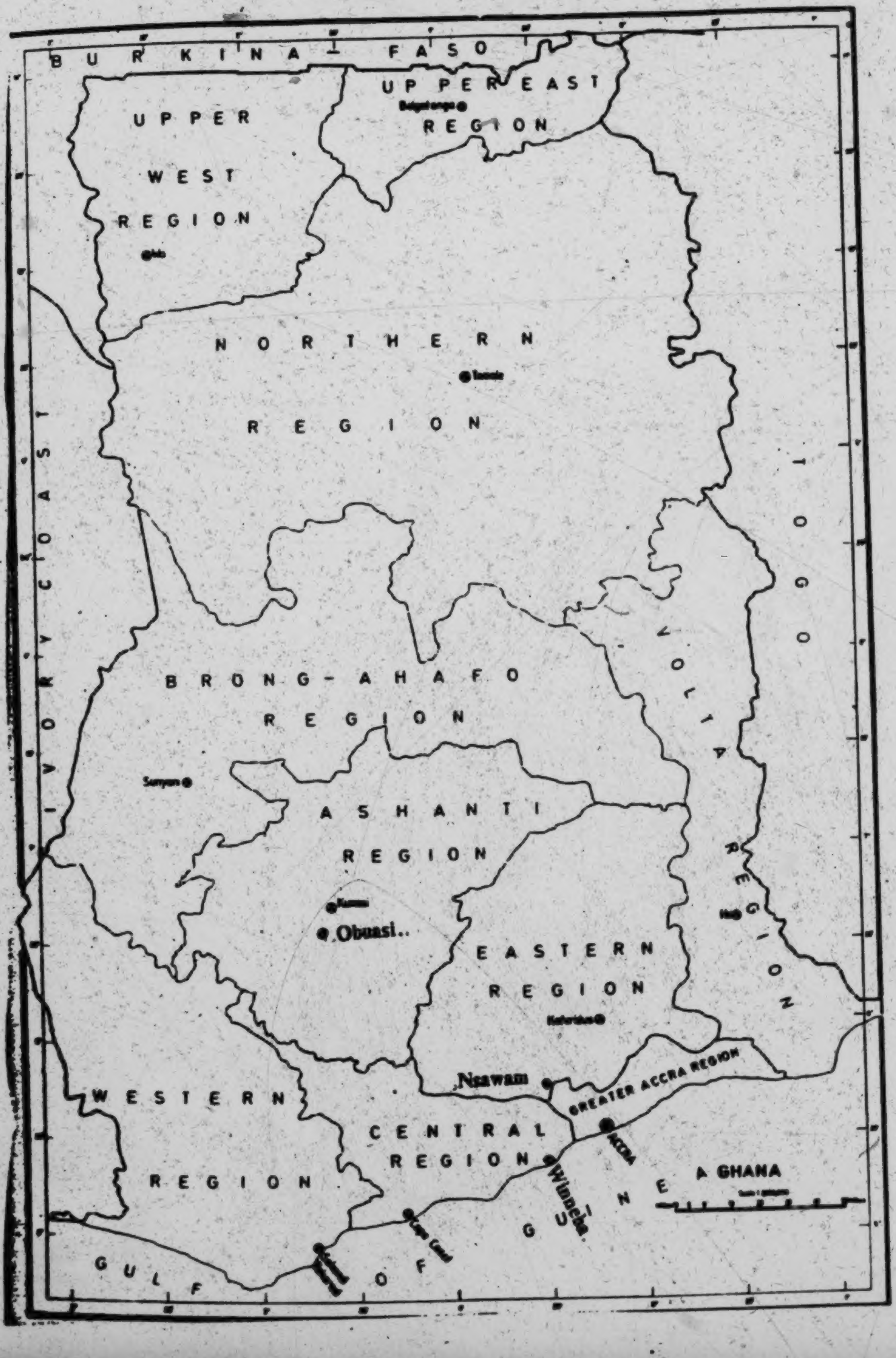
Table 44 Rank-Size Distribution of Towns by Region, Ghana, 1960

City	Region	Population	Rank
Accra	G Accra	337800	1
Kumasi	Ashanti	180600	2
Cape Coast	Central	41200	3
Takoradi	Western	40900	4
Tamale	Northern	40400	5
Koforidua	Eastern	34900	6
Sekondi	Western	34500	7
Winneba	Central	25400	8
Obuasi	Ashanti	22800	9
Nsawam	Eastern	20200	10

Source: compiled from 1960, 1970, and 1984 census data

With a population of over 40000, Tamale was the fifth largest settlement in the country in 1960, and easily the largest settlement in the whole of northern Ghana. Greater Accra captured the first position, as Accra was the most populated settlement with a population of

Fig 12. Distribution of Main Towns, Ghana, 1960


BURKINA FASO
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IVORY COAST
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ASHANTI REGION
Obuasi..
EASTERN REGION
Nsawam
GREATER ACCRA REGION
ACCRA
WESTERN REGION
CENTRAL REGION
Winneba
Cape Coast
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GULF OF GUINEA

over 337800. Interestingly, none of the remaining towns in table 44 was situated in the Greater Accra Region, even though that region is the most urbanised in Ghana. The Ashanti Region, which is the most populous region, managed to capture the second and ninth positions only with Kumasi and Obuasi. Kumasi had a population of over 180600 at the time, while there were some 22800 people in Obuasi. The Central, Eastern and Western Regions also had two towns each; so that no single region actually accounted for an unusually large proportion of the settlements in the rank-size distribution in table 44. Another point worth mentioning is that 60 % of the towns in table 44 are regional capitals, the only exceptions being Nsawam, Obuasi, Winneba, and Sekondi. Sekondi-Takoradi team up to form the capital for the Western region. Accra is the Capital of Greater Accra, Cape Coast Central, Kumasi Ashanti, Tamale Northern, and Koforidua Eastern.

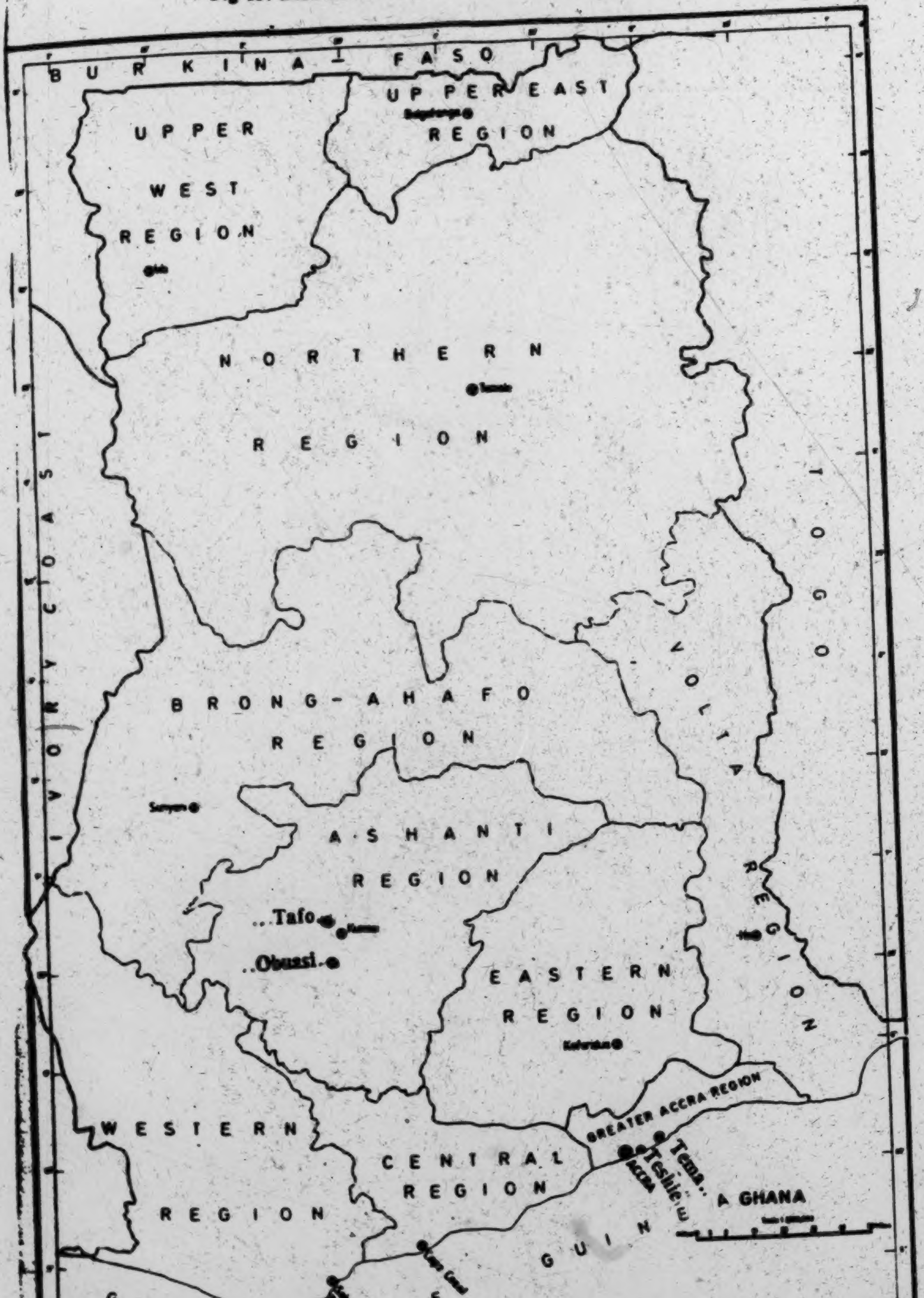
Table 45 Rank-Size Distribution of Towns by region, Ghana, 1970

City	Region	Population	Rank
Accra	G Accra	564200	1
Kumasi	Ashanti	260300	2
Tamale	Northern	83700	3
Tema	G Accra	60800	4
Takoradi	Western	58200	5
Cape Coast	Central	51700	6
Koforidua	Eastern	46200	7
Teshie	G Accra	39400	8
Sekondi	Western	33700	9
Tafo	Ashanti	33700	9
Obuasi	Ashanti	31000	10

Source: compiled from 1960, 1970, and 1984 census data

The most significant change in the rank-size distribution of towns from 1960 to 1970 is the rapid growth of Tamale. Tamale, the only non-southern town in table 44 moved from the fifth position to the third after Accra and Kumasi (fig 13). Its population more than doubled from 40400 to 83000 during that ten year period. As explained earlier, this rapid growth is due mainly to the opening up of the area for agricultural and other exploitation. Another major change is that the city of Tema, which was not among the ten largest urban settlements in 1960, became the fifth largest city in the country by 1970. Social and economic reasons account for Tema's growth. Tema is the main industrial city in Ghana and has one of the largest concentration of industrial activities in the country. Public and private industrial

Fig 13. Distribution of Main Towns, Ghana, 1970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..Tafo
..Obuasi
EASTERN REGION
GREATER ACCRA REGION
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establishments have been built to take advantage of the import and export facilities associated with the harbour, as well as the Ghana industrial free zone which is situated along the Tema coast. Tema's large fishing harbour has tended to attract many people to the city and enhanced its growth. In short, no where in the country is paid employment more rife than Tema on the basis of the proportion of the population receiving wages and salaries.

Sight should also not be lost of the fact that Winneba and Nsawam lost their positions to Teshie and Tafo (table 45). Situated between Accra and Tema, Teshie provides dwelling facilities for many people who commute to Accra and Tema daily for employment and other activities. In addition, Teshie has been an important fishing ground and this has further increased settlement in that area. Tafo's growth may be attributed to spill over effect from the city of Kumasi. Adjoining Kumasi, it has had the opportunity to accommodate some proportion of Kumasi's growing population; and like Teshie, Tafo has a lot of people who commute to Kumasi daily for work. Besides, Tafo is rich in timber resources and a flourishing sawmill industry exists.

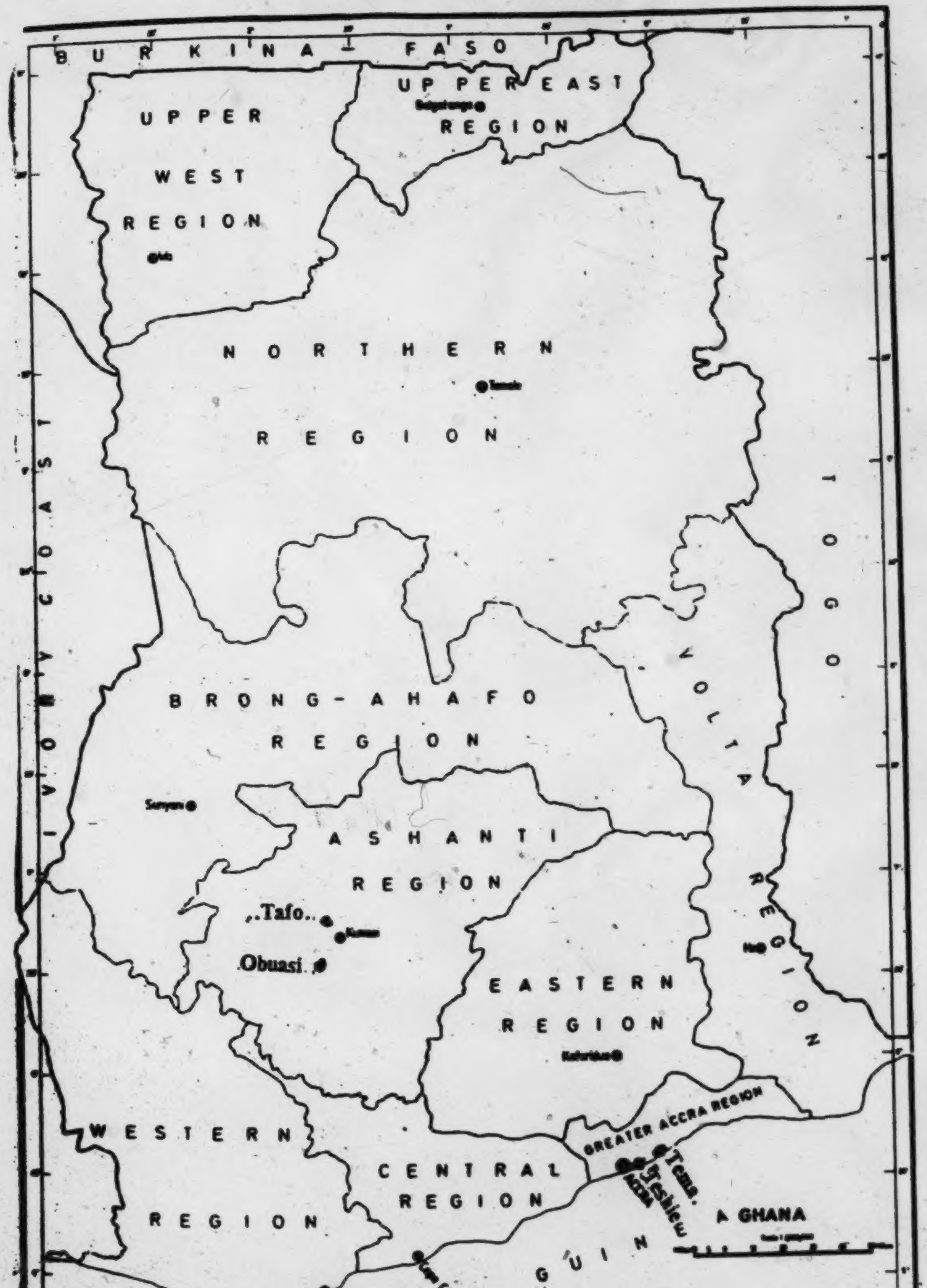
Table 46 Rank-Size distribution of Towns by region, Ghana, 1984

City	Region	Population	Size
Accra	G Accra	859600	1
Kumasi	Ashanti	348900	2
Tamale	Northern	136800	3
Tema	G Accra	99600	4
Teshie	G Accra	63000	5
Takoradi	Western	61500	6
Obuasi	Ashanti	60100	7
Cape Coast	Central	57700	8
Koforidua	Eastern	54400	9
Tafo	Ashanti	50400	10

Source: compiled from 1984 population census

As indicated in table 46, there was no new town in the ten largest towns in 1984 as compared with 1970. Changes in the rank of some of the urban centres are discernible. Accra, Kumasi, Tamale and Tema maintained the first four positions respectively as in 1970. Teshie moved to the fifth, while Takoradi dropped to the sixth. Obuasi moved up to the seventh position from the tenth in 1970; Cape Coast and Koforidua continue to drop in rank and occupied the eighth and ninth positions respectively in 1984, as compared to third and sixth respectively in 1960. It should be noted that if Sekondi-Takoradi is considered as one city, then the twin city, as it is called locally, takes the third position, and Tamale moves to fourth and so on (fig 14). It is interesting to learn of the continuous bias in the distribution of urban settlements in Ghana. Even for a date as recent as 1984, Tamale was the only town from the

Fig 14. Distribution of Main Towns, Ghana, 1984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UPPER WEST REGION
NORTHERN REGION
IVORY COAST
TOGO
BRONG-AHAFO REGION
VOLTA REGION
Sunyani
ASHANTI REGION
Tafo
Obuasi
EASTERN REGION
GREATER ACCRA REGION
WESTERN REGION
CENTRAL REGION
Tema
Teshie
GHANA
GULF OF GUINEA

northern half of the country to be included in the ten largest towns. 90 % of the ten largest towns in 1960, 1970, and 1984 are all found in southern half of Ghana. As noted by Goldscheider (1971), the northern regions have been providing cheap labour for the farms and mines of the south creating a north-south movement of people, and depleting population in northern settlements, while increasing population in southern settlements at the same time. It goes without saying that the regions lying in the northern half of Ghana have been neglected for a long time and lack many necessary socio-economic ammenities and infrastructure. This presupposes that a population policy must identify this problem and that an effort should be made to provide some infrastructure outside the southern regions. Regional development programs and projects must be more equitably distributed throughout the country. This will definitely remove some of the disparities in the distribution of employment and other socio-economic opportunities, lead perhaps to reduced southbound movements, and result in a better distribution of urban centres. It must also be realised that some researchers believe that regional development programs can increase migration.

It should be noted that many other towns experienced rapid growth during the study period and that they have not been mentioned here because they did not fall within the ten largest towns. A case in point and a notable example is Ashiaman in the Greater Accra Region and lying adjacent to Tema. Ashiaman was the eleventh largest town in 1984 with a recorded population of over 49400. This township, which was virtually unknown in 1960 and a little village in 1970, attributes its rapid growth to the spill over of population from the city of Tema. Many new arrivals to Tema settle in for cheaper accommodation at Ashiaman and commute daily to Tema.

E. Rank-Size Rule

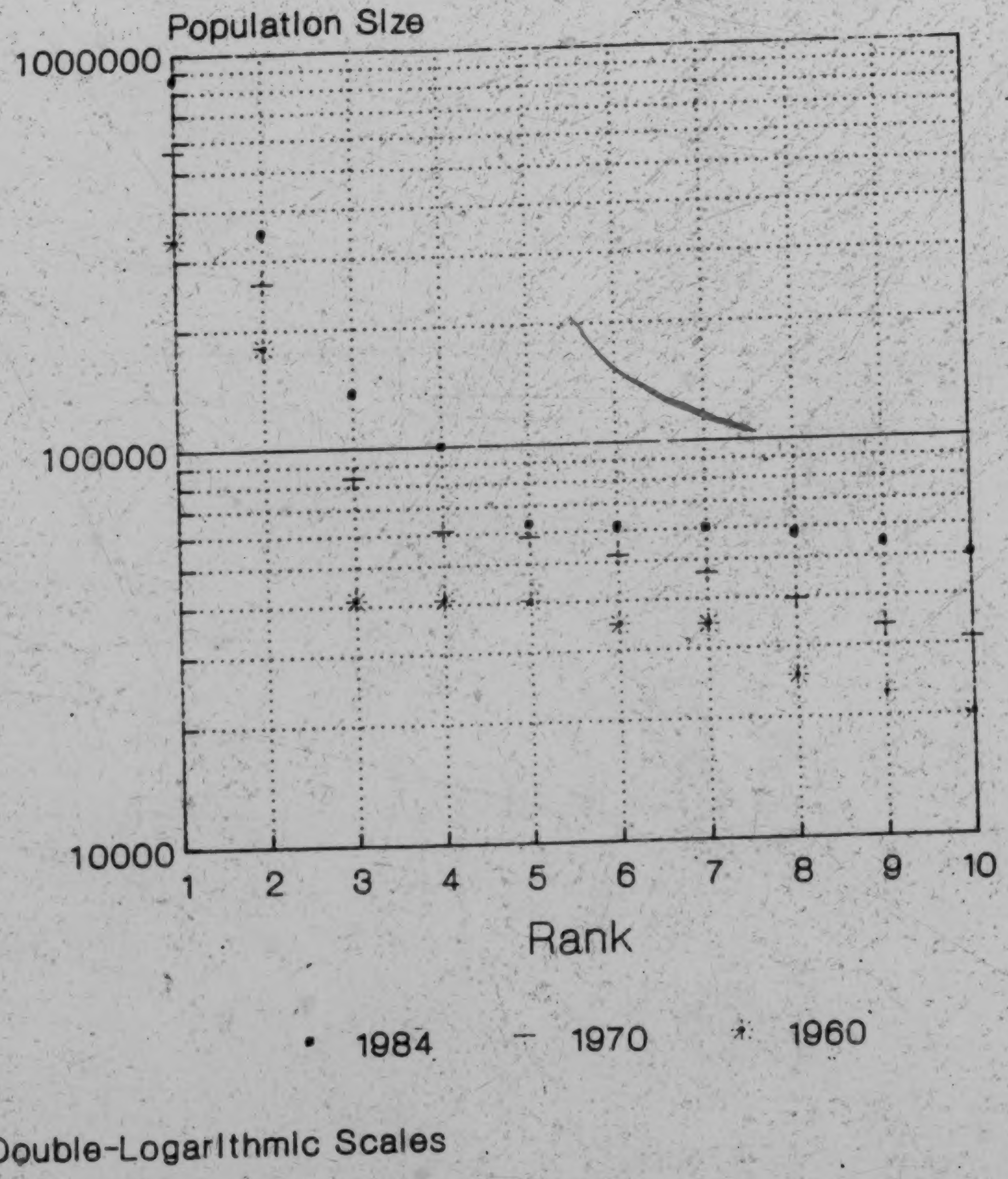
One may also want to apply the rank-size rule to study urbanization in Ghana. This rule provides a summary of city size relation and has been noted by Zipf (1949) and by Berry and Garrison (1959). According to Berry and Garrison when city ranks are plotted against city population size, a relationship emerges. It is discovered that there are few large cities and many small ones,indicating an empirical relationship between the rank of the city and its population. Empirical studies of this relationship reveal a concave curve, while linear and semi-linear graphs are obtained when logarithmic axes are used.

Figure 15 presents the diagrammatic representation of this relationship for Ghana for 1960, 1970 and 1984. The plots conform to the general pattern of few large cities at the top and many small cities concentrated at the bottom of the graph; but the curve is concave upwards instead of linear when logarithmic values are employed. This means that the rank-size rule does not actually hold for Ghana. However, a closer examination of the graph reveals that if the two main cities are excluded, a linear pattern emerges, and that this is true for all the years in the study period. Another notable result from the plot is that no drastic changes occur in the pattern over time. Between 1960 to 1984, Accra continues to be at the far top of the curve while the large number of towns was at the bottom.

According to Thomlinson (1969:137) Zipf, preferred the formula M=RS, in which M is the population of the largest city in the nation, R is the rank of each city and S the population of the given city. So that the second ranked city should be one half as large as the biggest, the third ranked one third , the fourth ranked one fourth and so on. In fact a glance at appendices 52, 53, and 54 shows that this observation by Zipf is largely true for Ghana, as the proportions are ~~even~~ smaller. With the exception of 1960 when the population of Kumasi, the second largest city, was 53% of the population of Accra, the proportions for the other cities in 1960 and for all the cities in 1970 and 1984 were lower than expected from the rank size rule. This points further to the extent to which Accra has become a primate city in Ghana. It indeed interesting to note that Kumasi's population as a percentage of Accra's population continues to dwindle. Another way to test the rank-size rule is to apply the formula

$$P = C/R^B$$

Fig 15. Rank-Size Distribution
Ghana, 1984, 1970, 1960



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where P is the population of the city, R the rank, B is the rank-size coefficient and C a constant. According to Zipf, B should be equal to 1 if the rank-size size rule holds and if there are many primate cities. From this equation,

$$\text{Log } P = C + B \text{ Log } R$$

and the population then becomes a function of the rank. The results from the regression confirm that the rank-size rule is not applicable in Ghana and point to the presence of very few primate cities, if any. In fact, Accra is the only city which could be considered primate. As shown in appendix 55, the B values or what the study calls rank-size coefficients are indeed negative and less than 1. It is also interesting to note that the values of the coefficient continues to decrease over time. This means that the rank-size rule is becoming less applicable over time. The decreasing values of the rank-size coefficient also point to the fact that the few existing large cities (mainly Accra and Kumasi) are moving further away from the other towns in terms of their size, and this is clearly depicted in fig 15.

F. The City of Accra

There exists a marked uneven distribution of settlements and population in the world, and this has been increasing through regional and urban polarization. It has already been shown that 90 % of the ten largest towns between 1960 and 1984 was located in Southern Ghana. It must be pointed out here that Accra has been growing rapidly in size and population. The period after independence saw the development of Accra as a primate city. Most industries were located here; and with its modern ammenities, Accra has been a major attraction for young educated and non-educated people from other parts of the country, especially the hinterland. The results have been that Accra continues to be the main city, increasing in area, population size and population density. This conforms to the general trend in Africa where rapidly growing urban population is characteristically endemic in many capital cities.

In 1960, Accra recorded a population of 337800 and this increased by 67 % to 564200 in 1970; by 1984, there were 859600 people living in the city, an increase of 52 % over the 1970 population, and a phenomenal increase of 155 % between 1960 and 1984 (table 47). There is, therefore, no question about the rapid growth of Accra. In 1984, its population was more than double the population size of Kumasi, the second largest city, and this shows the degree to which Accra has become a primate city. Table 47 shows that the proportion of the country's population living in Accra was 5.0 % in 1960, 6.7 % in 1970, and 7.0 % in 1984. If it is borne in mind that Accra is just one of the large number of urban and rural settlements, it is realised to the full how important these relatively small proportions are. Given the fact that Accra's population has been more than two times that of Kumasi, the second largest city, and several times higher than the other cities, Accra may be considered a primate city. If in 1984, Ghana had 189 urban settlements and if Accra alone contained 7.0 % of the total population and over 21 % of the urban population, then it may be plausible to conclude that Accra is a primate city. The overconcentration of government machinery,Ministries, Departments, educational facilities, and non-agricultural employment opportunities facilitate the continued development of Accra as a primate city. It is believed that Accra's population will be over one million in the early 1990s, if not sooner.

Thomlison (1961:136) notes that 'to be a primate city, a metropolitan must be several times more powerful a force in national events as the second most influential city.' Indeed this is very true for Accra and Kumasi, the second largest and most influential city. Accra's population was in most cases more than two times that of Kumasi, it is the seat of Government, has all the Ministries and headquarters almost all Departments and Corporations. It is indeed several times more powerful a force in national events as Kumasi, since almost all decisions affecting the country are taken in Accra.

Table 47 Population of Accra, 1960-84

Year	Population of Accra	National Population	Proportion (%)
1960	337800	6726815	5.0
1970	564200	8559313	6.7
1984	859600	12205572	7.0

Source: computed from the Preliminary Report of the 1984 Census

G. Urban Population

Rural and Urban population for the country as a whole are found in table 48. The urban proportion, defined as the proportion of the population living in urban areas, continues to rise during the entire study period. This proportion increased from 23.0 % in 1960 to 28.9 % in 1970, and 31.3 % in 1984. From 1960 to 1970, the urban proportion increased by almost six percentage points, while only three percentage points were added to the 1970 proportion by 1984. Evidence in the literature suggests that the rate of change in urban proportion in developing countries is not historically rapid, but that it is the growth rate of urban population that is phenomenally rapid (Preston, 1979: 196). For the country as a whole, the urban proportion increased by 36 % from 1960 to 1984. For the 1970-84 period, the urban proportion increased by 25.7 %. These are less than an increase of 60 % in the urban population between 1960 and 1970, and an increase of 55 % during the 1970-84 period. Between 1960 and 1984, the urban population in Ghana increased by more than 147 %, as compared with a 36 % increase in the proportion of the population classified as urban.

This urban growth exhibits the characteristics of the second stage of the mobility transition theory. Zelinsky (1971) explains that in the second stage of the mobility transition theory, there occurs a movement of people from the countryside to the cities and other urban areas, leading to increasing urbanisation.

Table 48 Urban and Rural Population by Sex and Region, Ghana, 1984

Region	Urban		Rural	
	Male	Female	Male	Female
Western	131282	130484	455006	441035
Central	155596	173600	403716	409423
G Accra	581102	607176	119850	122971
Eastern	224752	241524	610210	604404
Volta	120281	127625	466659	497342
Ashanti	330052	349698	698852	711498
B Ahafo	158114	162992	455607	429895
Northern	144005	149457	432820	438301
U East	23040	24509	184712	205747
U West	48153	51354	320039	353198

Source: Preliminary Report of the 1984 Population Census

This means that the situation in Ghana corroborates the view expressed by Preston regarding urban population growth.

As almost 69 % of the population of Ghana lived in rural communities in 1984, table 48 shows that all the regions recorded higher rural populations than urban, except Greater Accra. In the western Region, 455000 males and 441000 females lived in rural areas, as compared with 131282 males and 130484 females living in urban areas at the same time. Similarly, in the Central region, over 155000 males and 173000 females lived in urban areas, compared with 403700 and 409423 males and females respectively who were enumerated in rural areas in that year. In addition, 48153 males and 51354 females lived in urban communities in the Upper West Region in 1984, as compared with 320000 males and 353000 females who were enumerated in the rural areas.

Indeed the story is the same for all the other regions, except Greater Accra Region. It is also interesting to realise that for most regions, the urban population is about a third of the rural population, as indicated in the rural and urban populations for Western, Central, Eastern, Volta, and Northern. In the Northern region, for example, 144005 males lived in urban areas, and this is 33.3 % of the 432820 males living in rural communities in that region in 1984. Similarly the urban female population of 149457 constituted about 34 of the 438301 females enumerated in rural communities in that year. A contrary situation is found in the highly urbanised Greater Accra Region. 581102 males and 607176 females lived in urban areas as compared with 119850 and 122971 males and females respectively found in rural areas. In this region, the proportion of the rural male population to the urban male population was only 20.6 % in 1984. The corresponding proportion for the female population was 20.3 %. In the Ashanti region the Urban male population of 330000 constituted less than 50 % of the rural male populatiuon of 698852, while the urban female population was also less than 50 % of the rural female population. The lowest proportion of urban population as a percentage of the rural population was recorded in the Upper West and Upper East Regions. In the Upper East Region, 23040 males and 24509 females were enumerated in urban areas as compared with 184712 and 205747 males and females respectively who were found in rural areas. This means that the urban male population was only 12.5 % of the rural male population, while the proportion of urban female population as a percentage of the rural female population was 12.0 %. Similar the corresponding proportions for males and females in the Upper West region was 15 % and 14.5 % respectively. This is expected since these two regions are the least urbanised in the country. In 1984, only 10.8 % of the population of Upper East and 8.5 % of the population of Upper West lived in urban areas.

The proportion of the population classified as urban for the regions are presented in table 49. It is clear from the table that the distribution of the urban population, and hence urban proportion, is most uneven.

Table 49 Urban Proportions, Ghana, 1960-84

Region	1960	1970	1984	% Change 1960-84
Western	24.7	27.6	22.8	-7.7
Central	28.0	28.5	26.5	-5.4
G Accra	78.8	85.3	83.5	6.0
Eastern	20.2	24.6	26.7	32.2
Volta	13.2	16.0	20.7	36.2
Ashanti	25.0	29.7	32.1	28.4
B Ahafo	15.6	22.1	26.6	70.5
Northern	13.0	21.2	24.7	90.0
U East	3.9	5.8	8.5	117.9
U West	5.0	6.7	10.8	116.0
National	23.0	28.9	31.3	36.1

Source: Data from 1960, 1970, and 1984 Population censuses

Throughout the study period, Greater Accra recorded the highest urban proportion, while the Upper East Region had the lowest. In 1960, 78.8 % of the population of Greater Accra lived in urban areas. This was about 75 percentage points more than the 3.9 % urban proportion recorded for the Upper East Region. Other regions which recorded comparatively higher urban proprtions were Central (28.0 %), Ashanti (25.0 %), Western (24.7 %), and Eastern (20.2 %). The Northern, Upper East and Upper West Regions recorded the lowest proportions of 13.0 %, 5.0 %, and 3.9 % respectively.

The pattern is the same for 1970 and 1984. The proportion of population classified as urban was higher in the Greater Accra Region, 85.3 % in 1970 and 83.5 % in 1984. The Upper East Region recorded the lowest urban proportions of 5.8 % and 8.5 % for 1970 and 1984 respectively, increasing only slightly from 1960. Ashanti, Central, Eastern, Western, and Brong Ahafo also had large urban proportions in 1970 and 1984 as shown in table 49. Other regions recording lower urban proportions include Northern and Upper West. This further reinforces the assertion that there is a polarization of urban population in southern Ghana. In 1970 and 1984, the Ashanti Region displaced the Central Region as the second largest region in terms of the proportion of the population classified as urban. In 1970, 29.7 % of the population of the Ashanti Region was urban as compared with 28.5 % for the Central Region; and in 1984, this increased to 32.1 % in the Ashanti Region, while it declined to 26.5 % in the Central Region. The Western Region also experienced a drop in urban proportion between 1970 and 1984 due to the outflow of people to the Greater Accra Region. It is interesting to learn that Greater Accra actually experienced a drop in urban proportion from 85.3 % in 1970 to 83.% % in 1984. This decline, it should be noted, is due mainly to the addition of Ada-Foah District to the Greater Accra Region in 1970. This district was largely rural in 1960 and 1970, and had a substantial rural proportion by 1984. Another reason is that many new migrants to the region settled on the periphery and outlying villages which were not considered part of Accra city, and in so doing increased the population of the region classified as rural.

Finally, it should be noted that in 1960, four regions-Greater Accra, Western, Central, and Ashanti--recorded higher urban proportions than the national average. By 1970 and 1984, this had decreased to two, with Greater Accra and Ashanti being the only regions to have higher urban proportions than the national average. Another interesting feature of urbanisation in Ghana during the study period was that even though the Upper East and Upper West recorded the lowest proportion of the population classified as urban for 1960, 1970, and 1984, they also experienced the highest percentage change in urban proportion from 1960 to 1984, 116 % and 118 % respectively for the two regions. Another low percentage change was recorded in the Central region (-5.4 %) and Western (-7.7 %). It is noteworthy to mention that the Central and Western Regions were the only regions to record negative growth in urbanisation during the study period.

Table 50 shows percentage of the population classified as urban, ie urban proportions, in Africa and other subregions in the developing world. It is evident from the table that the proportion of the country's population classified as urban was lower than the world average in 1960 and 1970, and that even the urban proportion of 31.3 % recorded for Ghana in 1984 was lower than the 1980 world average of 41.8. It is also clear that even though Ghana's urban proportion was higher than the average for the African continent and South Asia, the percentage of the country's population living in urban areas was far lower than that in Latin America. The urban proportion in Ghana was generally less than half that of Latin America in 1960, 1970, and 1984. With regards,to East Asia, it was only in 1970 that Ghana recorded a higher urban proportion.

Table 50 Urban Proportion in Africa and Major Developing Regions

Region	1960	1970	1980
Ghana	23.0	28.9	31.3 *
Africa	18.4	22.8	28.9
L America	49.1	57.3	65.4
S Asia	18.4	21.2	24.8
E Asia	24.6	28.2	32.8
World	33.9	37.4	41.8

Source: Preliminary Report of 1984 Census; Adepoju, 1988: 127

* 1984 instead of 1980

According to table 51, the distribution of urban population by size of city or urban settlement, using the ten largest cities, is very uneven. In 1960, there were no cities in Ghana over 500000 and the urban proportion in cities with population 50000 to 100000 was absolutely zero. However, 66.6 % of the urban population was clustered in cities of population 100000 to 500000, with the remaining 33.4 % found in cities with less than 50000 people. If it is borne in mind that in 1960, Accra and Kumasi were the only two cities with population between 100000 and 500000, it is realised to the full how polarised urbanisation is in Ghana. Urban polarization occurs if the urban population is restricted to a few settlements or regions, as in the case of Accra and the Greater Accra Region.

Table 51 Percentage Distribution of Urban Population by Size of Settlement

Year	Under 50000	50-100000	100-500000	500000+
1960	33.4	0.0	66.6	0.0
1970	13.0	20.7	21.2	45.9
1984	0.0	24.9	27.1	48.0

Source: Compiled from 1960, 1970, and 1984 census data

A more even distribution of urban population in the ten largest cities appeared in 1970. 13.0 % of the urban population lived in cities with 50000 or less population, 20.7 % in settlements with 50000 to 100000 people, 21.2 % in cities with 100000 to 500000 people, and 45.9 % in cities with population over 500000 population. Again Accra was the only settlement with over 500000 population and accounted for 46 % of the said urban population. Accra and Kumasi accounted fot 67 % of the urban population in the ten largest towns, indicating a slight increase in polarisation. By 1984, the distribution changed drastically. Accra's share increased to 48.0 %, the proportion in cities under 50000 increased to 25.0 %, and the proportion in the 100000 to 500000 increased to 27.0 %.

For the entire study period, the proportion of urban population in the first category, ie towns with 50000 or less population decreased from 33 % to 0 %, showing a rapid growth in town size. With regards to the category of cities with population between 100000 and 500000, the proportion declined from 67 % in 1960 to 21 % in 1984. The large decrease is due to the fact that the city of Accra, with its huge population, moved out of this category into the over 500000 category. It is, therefore, clear that even in 1984, Accra accounted for almost 50 % of the urban population under discussion.

A study of the distribution of urban population in the four city councils and the Tamale Urban Council reveals striking diferences (table 52). The city councils refer to individual cities while the Tamale urban councils refers to the Tamale settlement as well as the other urban settlements adjoining Tamale and which is administered by the Tamale Council. As expected, Accra City Council had the higest proportion of 93.8 % in 1960, 96.9 % in 1970, and 98.8 % in 1984, as compared with 69.4 %, 69.7 % and 66.5 % for Sekondi-Takoradi City Council for the three years respectively. The Accra City Council experienced a change of 5.3 percentage points, while the Sekondi-Takoradi City Council recorded a change of -4.2 percentage points. High urban proportions were also found in the Kumasi City Council, where 87.8 %, 85.2 %, and 81.7 % of the population were classified as urban in 1960, 1970 and 1984 respectively. This City Council also recorded a negative growth of 6.9 %. The Tema City Council, containing the large harbour and fishing port, enjoyed a steady increase in urban proportion from 83.3 % in 1960 to 94.1 % in 1970, and 94.8 % in 1984. Thus, this industrial city recorded the highest percentage increase in urban population of 13.8. It is necessary to mention that 50 % of the city councils experienced declining urban proportions.

Table 52 Proportion of Urban Population by City Council, Ghana, 1960-84

Council	Urban Proportion (%)		
	1960	1970	1984
Sekondi-Takoradi	69.4	69.7	66.5
Accra	93.8	96.9	98.8
Tema	83.3	94.1	94.8
Kumasi	87.8	85.2	81.7
Tamale	69.5	84.9	81.4

Source: compiled from the Preliminary Report of the 1984 census

As indicated in table 53, those regions which recorded increasing urbanisation also experienced decreasing proportion of population living in rural areas as expected. Greater Accra had the lowest percentage of population living in rural areas, 21.2 in 1960, 14.7 in 1970 and a slight increase to 16.5 in 1984. This constitutes a decrease of 22.0 % during the entire study period. With the exception of the Western and Central Regions which recorded an overall increase in rural proportion between 1960 and 1984, all the remaining eight regions actually experienced decreasing percentages of their population in rural communities. The proportion of Western Region's population living in rural areas decreased from 75.3 % in 1960 to 72.4 % in 1970, and then increased to 77.2 % in 1984, an increase of over 2.5 %. Similarly, the proportion of the population living in rural areas in the Central region increased by 2.1 %, from 72.0 % in 1960 to 73.5 % in 1984. This may be due to the persistence of high fertility in the rural areas, and perhaps a decline in urban fertility as a result increasing education and acceptance of family planning.

Table 53 Rural Population as a Percentage of Regional Population, Ghana, 1960-84

Region	1960	1970	1984
Western	75.3	72.4	77.2
Central	72.0	71.5	73.5
G Accra	21.2	14.7	16.5
Eastern	79.8	75.4	73.3
Volta	86.8	84.0	79.3
Ashanti	75.0	70.3	67.9
B Ahafo	84.4	77.9	73.4
Northern	87.0	78.8	75.3
U East	95.0	94.3	89.2
U West	96.1	94.2	91.5

Source: computed from census reports of 1960, 1970, and 1984

H. Is Ghana Over-Urbanized

The concept of over-urbanization has been highlighted by Davis and Golden (1957). Using various indexes, such as agriculture density, the degree of urbanization, percent of population in cities 100,000 or more, percent of males in non-agricultural activities, literacy rates, etc, they discuss the concept of over-urbanization. They assert that the word over-urbanization may denote an evaluative interpretation of the consequences of undue influx of people from rural areas to cities and urban centres. Davis and Golden (1957:131), therefore, use non-agriculturism as an index of economic development and urbanization. They show that, on a worldwide basis, there is a high correlation (.86) between this index of economic development and urbanisation. They argue further that if the relationship between the two variables is represented in the form of a regression curve, certain countries are found to be off the line to a significant extent. Using Egypt as a specific study, they show that even though Egypt is not as industrialized as Switzerland, Sweden or France, that country is nearly as urbanized as Switzerland, and definitely more urbanized than Sweden and France on the 100,000+ level (table 54). So that over-urbanization is real in Egypt according to Davis and Golden.

Some researchers have presented evidence to challenge the concept of over-urbanization as presented by Davis and Golden. Sovani (1966) argues that countries which may be classified as 'over-urbanized' may not necessarily be 'over-urbanized', but that such countries may be experiencing rapid population growth. Urban growth may be decomposed into natural increase in the existing urban population, rural-urban migration, and reclassification of rural settlements as urban areas. If the population in any urban settlement is experiencing high fertility and declining mortality, ie. high natural increase, then that population is likely to be classified as 'over-urbanized', since high natural increase in urban areas may result in increasing urban proportion and, thus, urbanization.

Using evidence from 41 countries, Sovani (1966) finds a correlation of .70 between the proportion of population living in urban areas and the per cent of labour in non-agricultural occupations. Sovani concludes that the correlation worked out by Davis and Golden varies at different stages of industrialisation and that the correlation is not stable over time. Sovani stresses also that rural-urban migration that leads to over-urbanisation is actually a consequence of rural push, rather than the demand for labour in the non-agricultural urban economies, as propounded by Davis and Golden. Sovani postulates that in developing countries with high rate of natural increase and low levels of industrialisation, one may be tempted to think there is over-urbanisation.

From the foregoing discussion, one may want to answer the question --is Ghana over-urbanised? The answer is no. Ghana is not over-urbanised even by the definition proposed by Davis and Golden. Table 54 shows that in 1960, the percentage of Ghana's population in settlements of 100000 or more people was only 7.7, and this was by far lower than the proportion in the developed countries and Egypt in the late 1940s. Even in 1984, only

11.2 % of Ghana's population lived in cities over 100000 population. It is true that Ghana has been experiencing rapid urbanisation as discussed in this dissertation, but it may be erroneous to conclude that the country is over-urbanised. One is, therefore, more inclined to accept the arguments of Sovani that countries like Ghana may be experiencing rapid urbanisation as a result of high natural increase and that such countries may not necessarily be 'over-urbanised' in terms of the proposals by Davis and Golden. In fact the annual growth rate of Ghana's population was 2.4 % during 1960-70 and 2.6 % between 1970 and 1984, and these are indeed high growth rates.

It should further be noted that Davis and Golden actually concede that West and Central Africa should not be classified as over-urbanised, even though those regions are experiencing rapid urbanisation. On West Africa, Davis and Golden (1957:137) write:

> 'But the rapidity of urban growth today should not lead one to think of the region as highly urbanised. On the contrary, it was so profoundly rural only a short time ago that the recent growth of cities has not yet brought the percentage of urban population to a point of parity with even other underdeveloped areas'

Table 54. Percentage of Population in Cities of specific Size, Selected Countries

Country	Date	100000+	20000+
Switzerland	1950	20.6	31.2
Egypt	1947	19.3	28.5
Sweden	1945	17.4	29.2
France	1946	16.6	31.9
Ghana	1960	7.7	
Ghana	1970	9.6	
Ghana	1984	11.2	

Sources: Davis and Golden (1957:131); Reports of the 1960, 1970, and 1984 censuses

I. Projections of Urban and Rural Populations

United nations (1971:50) indicates that between 1948 and 1960, urban growth in Ghana was 11.5 %. The urban proportion in Ghana was 23.0 % in 1960, 28.9 % in 1970 and 31.3 % in 1984. United Nations (1974) provides various methods for projecting the urban population for various regions of the world. A simple method for urban population projection for areas with deficient data, such as African countries, is the linear extrapolation of past and present urban proportions. As there has not been any significant change in the urban process in Ghana, manifest in the continuous growth of towns, persistence of high rural-urban migration, natural increase, and the development of new towns, the 1970-84 urban growth pattern is likely to persists.

Table 55 shows projected urban population for Ghana. Three series, presenting three assumptions, are found. Achanfuo-Yeboah (1983) projects Ghana's population under three varying assumptions: high variant, medium variant, and low variant. The high variant projection presupposes that urban population will increase rather rapidly; the low variant asssumes that urban growth will be slow, while lying between these two is the medium variant with its inherent assumption of moderate growth in urbanisation (Achanfuo-Yeboah, 1983:41-47). According to the projections, between 1975 and 2000, urban population will grow from 3.1 million to 10.6 million (series A), 8.8 million (series B), and 7.4 million (series C). This represents urban proportions of 51.7 %, 43.1 % and 36.2 % for the three series respectively in the year 2000. The method employed is the linear extrapolation of the urban trends between 1970 and 1984 to the year 2000.

Table 55 Projected Urban Population, Ghana, 1975-2000

Year	Series A	Series B	Series C
1975	3138062	3138062	3138062
1980	3950391	3950391	3950391
1985	4948444	4757729	4668544
1990	6175953	5791217	5593223
1995	8521613	6895081	6028776
2000	10587958	8826712	7413619

Source: Achanfuo-Yeboah, 1983:46; U N, 1979:55

United nations (1979:59) states that urban proportion in Ghana in the year 2000 is expected to be 51.7 %. On the basis of this, series A may seem plausible. However, given the slower growth of urban population between 1970 and 1984, the predicted value by the United Nations may be unrealistic. The urban proportion increased by less than three percentage points from 28.9 % in 1970 to 31.3 % in 1984, as compared with an increase of 5.9 percentage points in the 1960-70 decade. On the basis of this, Series B is more plausible, as it presupposes only a moderate growth in urban population. Under this series, there will still be more Ghanaians in rural than in urban areas between 1975 and 2000. According to these series, while 3.1 million people lived in urban areas in 1975, there were some 6.7 million people, double the urban population, living in rural communities in 1975. If it is borne in mind that 6.7 million was the total population in Ghana in 1960, it is realised that the 1975 rural population of 6.7 million was large. By 1995, there would be 6.9 million people or 39 % of the country's population living in urban areas, as compared with 10.8 milllion people or 61 % of the population who will be living in rural areas at that time. In the year 2000, the projections indicate that 43 % of the population will be in urban settlements and so on. It should further be noted that Series C provides much slower growth in urban population and thus, urbanisation. Series C envisages that by the year 2000, for example, the urban population will be only 7.4 million, as compared with a projected rural population of over 13 million (table 56).

Table 56 Projected Rural Population, Ghana, 1975-2000

Year	Series A	Series B	Series C
1975	6730059	6730059	6730059
1980	7434021	7434021	7434021
1985	8212311	7895806	7747798
1990	9073314	8508085	8217205
1995	9158082	10784614	11650919
2000	9891652	11652898	13065991

Source: Achanfuo-Yeboah, 1983: 46; U N, 1979: 55

J. Some Determinants of Urbanisation

Evidence from the literature suggests that three main causes of urbanisation are discernible (see, for example, U N 1980). These are migration, reclassification of rural areas to urban areas, and natural increase. United Nations (1980) agrees that 60 % of urban growth is due to natural increase in most developing countries, while 40 % may be attributed to migration and, to a lesser extent, reclassification of rural settlements. Data are not available for the present study to decompose urban growth in Ghana into these components. Vital registration which should provide data for the computation of natural increase is poor in quality and restricted to a few urban areas. Wogugu (1974:15) notes that the absence of vital registration in most parts of Africa serves as a major limitation to our knowledge about trends and variations in vital events in Africa. In addition, any settlement which attains a population of 5000 in Ghana is automatically designated as urban. The use of political instruments is rather limited; ie the Ghanaian Government does not designate settlements as urban by decree or act of parliament.

Under the circumstance, this study only attempts to establish the statistical effects of such variables as population growth and net migration on urbanisation. The effects of population growth is slightly different here than it is in the migration model in that the direction is different. It is believed that the slope here should be positive, as the areas with high population growth are more likely to attain the urban threshold population of 5000 and, thus, become urban. As stated earlier, the model proposes that population growth affects urbanisation directly, and indirectly through net migration. High population growth in rural areas results in land fragmentation and other pressures which increase the propensity to migrate. As people move from rural to urban areas, urbanisation occurs.

The correlation matrix provided in table 57 shows that the independent variables of net migration and population growth have high correlations with the dependent, but that the correlation between these two predictor variables is only .368.

Table 57 Correlation Matrix for Urbanisation Model

	Urbanisation	N Migration	Pop Growth
Urbanisation	1.000	.551	.745
N Migration	.551	1.000	.368
Pop Growth	.745	.368	1.000

Source: regression analysis

K. Slopes, Variance and Significance Levels

Table 58 presents the bivariate effects of population growth and net migration on urbanisation in Ghana. It is evident from the table that over 30 % and over 55 % of the variance in urbanisation is explained by net migration and population growth respectively. In this bivariate relationship, a unit change in the value of net migration causes a change of .266432 in the value of urbanisation. The corresponding slope for population growth is .835296, and both slopes are statistically significant at all levels. These bivariate effects have been obtained by regressing urbanisation on each of the predictor variables, while the direct effects are obtained by regressing urbanisation on all the predictor variables at the same time.

Table 58 Bivariate Effects of Net Migration and Population Growth on Urbanisation

Variable	Variance Explained	Slopes	Level of Significance
N Migration	.30307	.266432	.0016
Pop Growth	.55569	.835296	.0000

Source: regression analysis

It is interesting to learn that when both net migration and population growth are used in the equation, over 64 % of the variance in urbanisation is explained (table 59). The table also reveals that a unit change in the value of net migration and population growth causes a change of .703588 and .154657 respectively in the value of urbanisation. These effects, it should be noted, are statistically significant atleast at the .05 level. A sizeable proportion of the variance in urbanisation is, therefore, explained by net migration and population growth. The remaining 36 % may be attributed to reclassification of rural settlements into urban ones and other related causes, but the share of each cannot be determined from the data.

One may also want to determine the individual effects of natural increase and net migration on urbanisation. If the direct effects in table 59 are deducted from these bivariate slopes, the indirect effects may be obtained. Thus the indirect effects of population growth on urbanisation is .680639, while the corresponding figure for net migration is -.437156.

Table 59 Direct Effects of Net Migration and Population Growth on Urbanisation

Variable	Variance Explained	slope	Level of Significance
N Migration	.64399	.703588	.0000
Pop Growth		.154657	.0154

Source: as for table 58

L. Development and Distribution of Towns

Two regression models are used to study factors influencing the development and distribution of towns. In one model the predictor variables are net migration and urbanisation, and in another, the predictor variables are net migration and population growth. The correlation matrix for the first model is found in table 60.

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finance makes it absolutely impossible for the government to provide good health centres in all urban areas within the country.

There are still some parts of Accra without electricity. This is especially true of the peripheral areas of the city, and notably in such surburbs as Madina, Odorkor, Darkuman and so on. Even though Accra consumed over 60 % of the electicity produced in the country in 1984, parts of the city were without electric power. The point is that the growing urban population has outpaced the country's capacity to generate and distribute electricity.

The story is the same for the provision of sewage and pipe-borne water. A common sight in many urban settlements in Ghana is people carrying buckets in search of good drinking water. An attempt has been made to provide wells from which water is taken for various household requirements, but has proven to be inadequate.

The provision of more energy and good drinking water to urban areas will definitely alleviate the problem; but as this requires money and technology, the country is disadvantaged. Ghana abounds in water and human resources, but most of the water in the streams is lost to the sea. If additional finance can be obtained either through foreign aid or increased gross national product and foreign exchange earnings, it will be possible to tap these water resources and make them available to needy people in needy areas.

The solution to the problems of prostitution is rather complex, as it involves state control against individual freedoms and democracy. In attempting to alleviate the social problems of urbanisation in Ghana, we must clear our minds of any preconceptions and temptations to adopt simple but ineffective and sometimes unrealistic measures. It is easy to argue that by providing more housing, energy, and other urban facilities, the problem will be eradicated. This may be true theoretically but, in practice however, the lack of adequate financial and material resources hinder the government's capacity to make these amenities available in the required quantities and qualities. At best, attempts must be made to rechannel some of the available resources into the provision of more urban facilities; more appropriately, training programs for unskilled and semi-skilled personnel should be provided as a means of providing them with skills to enable them to be employable. This is a sure way of minimising burglary, prostitution, and insecurity in the urban areas. This may succeed if the training is such as to make them self-employed. Training in such professions as shoe-making, basket weaving, and construction are more likely to make people employable. Once employed, migrants can afford some decent accommodation which are rather expensive at the prevailing rent levels.

The best solution to the housing problem, given the available resources, is to restrict movement to Accra. Setting target growth rate and providing some urban ammenities in some of the other urban areas may help reduce the gravity of the problem. It must be cautioned that such an approach will not be easy to implement, as it tends to infringe on individual rights. In a country where freedom is cherished, but least provided or allowed by governments, the present study believes that any drastic measures can and should be taken to alleviate the worsening urban situation. In addition, the development of low cost and simple housing, both in the public and private sectors, should be encouraged, while emphasis should be put on block of flats or appartments instead of single units. It must be conceded that these measures may not eliminate the problems completely; however, if adopted, the measures may likely lead to a reduction in the level and intensity of the problems.

The economic problems of urbanisation are related largely to transportation, unemployment, and general poverty. Like most other facilities, the existing transportation facilities are not only inadequate but also overutilised. A common sight in Accra and Kumasi is long queues of people waiting for a means of transportation to enable them to move from one part of the city to the other. Perhaps an appropriate solution is to impose restrictions on the number of vehicles which can be allowed into the country. The advantage is that this will result in a situation where bulk spare parts may be imported for the small range of vehicles from the little money available. The point is that the present situation requires the importation of a wide variety of parts for a large number of different vehicles. This means that enough parts can not be obtained for each make of vehicle and this compounds the transportation problem. Besides the government is yet to recognise vehicle parts as a foreign aid item; in asking for foreign assistance, successive governments have tended to request money, food, parts for agricultural and industrial machinery, and some medication. No attempt has been made to include vehicle parts and it is at this stage necessary to request foreign assistance in the area of parts to enable the country to resolve some of the problems of transportation.

The other economic problems--unemployment and poverty--are interrelated. Many people, especially migrants to the cities, are poor because they are unemployed, underpaid, or have more expenses than income. There is, therefore, an urgent need to introduce job creation programs, and further training projects for the unemployed in the towns. This definitely will be attacking the symptoms; for all intents and purposes, it would be more effective to adopt measures which will restrict movements to the cities as previously discussed.

Indeed these problems of urbanisation cannot be resolved in isolation. There is a need for a comprehensive development plan, which should endeavour to make improvements in all sectors of the economy. This will likely raise productivity and production in agriculture and manufacturing industry, make more money readily available to the country, and allow for the provision of more urban renewal projects. Retraining programs are needed to raise labour productivity among the unskilled, uneducated, and semi-skilled, while the school curriculum should be adapted to the developments of the country.

Finally, it should be noted that the problems of urbanisation has a political dimension. Most governments have not given full recognition to the issues involved in increasing urbanisation, while most actions have been mere rhetoric. Genuine governmental commitment to solving the problems of urbanisation is lacking. The government must redefine the priorities of the country and demonstrate the willingness to resolve these urban problems. Another side of the political dimensions of urban problems is that even though some governments have expressed the desire to decentralise the administration of the country, time has actually shown that there continues to be an overconcentration of administration in the capital city of Accra. The result of such over concentration of administration is to attract more people to the city and make the urban problems more acute and complex.

VIII. Chapter Seven: Other Determinants of Internal Migration and urbanisation

As pointed out by the United Nations (1975:159), uneven population distribution may result from migration and/or relative differences in rates of natural increase. A host of factors combine together and individually to influence the impact of both migration and rate of natural increase. Factors such as family ties, remmitances, kinship, tribe and/or clan, language or dialect, religion, as well as available of relations in the area or region of destination, constitute major forces driving the internal migration and urbanisation processes. There are also economic, political, and psychological determinants of internal migration and urbanisation. There are no statistical data to support some of the arguments presented in this chapter. The assertions made here are based on the writer's knowledge of the Ghanaian society and evidence in the literature.

A. Family Ties and Remittances

A leading sociological determinant of internal migration is family ties. In the main, this is related to the maintenance of existing links between migrants and relations left behind in the region of origin, normally the village. This is also manifest in regular visits to the village by the migrant to see close relatives and friends, and arrange for some of these relations to come over to the area of destination. It should be noted that in Africa allegiance to the family is held supreme in many areas. Caldwell (1969) shows that in many African countries including Ghana, the decision to migrate is made by the family rather than the individual. The family as used here includes both nuclear and extended families. Thus the role of the family as an institution is very important in internal migration. In Ghana, the movement of young school graduates from the less developed regions to more developed ones, and from rural to urban areas always has the blessing of the family. Culturally, most Ghanaians are obliged to accept the family decision no matter how it affects them. Even though family composition is large and varied, most family members tend to support migration. This is because there is a perception which is difficult to explain among dwellers in rural and less developed areas that once a person gets to the city everything will be well, that he will get a job, and that he will be able to meet the needs of relations left behind. Most of the time the movement is from a rural community to an urban settlement; so that the family decision compelling a migrant to move affects urbanisation, as urbanisation increases with increasing urban population.

Another socio-cultural determinant of internal migration is the concept of remmitances. Remittance, in the form of cash or kind, occurs when the migrant sends some of his earnings back to relations in the region of origin. It is normally money, but it may sometimes be food, clothing, drugs, tools, bicycle, kerosine, fuel, and other items not readily available in the less developed region or village. Again according to Caldwell (1969), remmittances assume immense importance among migrants to Accra. Most of the migrants in Accra reported in Caldwell's survey that they had a primary responsibility to remit to uncles, spouses, parents and children left behind as soon as a job was obtained. This establishes a pattern in which the remmittance is, in most cases, from a male migrant to his wife and children, or to his parents and uncles as well as friends. The results of Caldwell's survey confirm that at least 10 % of all earnings of migrants in Accra was usually transfered to relations left behind.

Evidence in the literature now suggests that remittances play a rather useful role in the family and individual decision to move, and that in Africa, they now constitute an essential institutionalised characteristic of internal migration (see, for example, Adepoju, 1978 cited in U N 1984:237). The salient point is that so long as the elders and other relations in the village continue to be remitted by the relatives in the towns, they will always encourage young school graduates to move, and thus cause increasing urbanisation. United Nations (1984:15) notes the beneficial effects of remittances at the household level, while Preston (1979:210) points out that families which send out migrants to the city in Africa enjoy a stream of remittances which enhances their own standard of living.

B. Availability of Relations in Urban Areas

The availability of relations in the urban area or the region of destination constitutes another major force directing the migration stream. It is very necessary to note that most migrants to the city or more developed region are aided in one way or the other by relations who moved earlier. This takes the form of the provision of temporary accommodation, food, loans in cash, and transportation. In addition, new migrants depend essentially on relatives and friends for securing employment. In some cases, friends or relatives in the region of destination arrange for jobs for the would be migrant before the entire migration process is initiated. The result is that people who have relations in Accra and other urban settlements have a higher propensity to migrate than those without relations in the towns.

C. Tribal and Ethnic Affiliations

In Ghana, the tribe or ethnic origin to which a person belongs influences his decision to migrate and determines his destination. This is because the tribal issue is crucial as it is safer for people to move from one area to another within the same ethnic zone, rather than moving across ethnic boundaries. This also explains the predominance of short distance movements in Ghana, as people living on either side of regional boundaries are usually of similar origin. As Mabogunje (1972) notes, as long as the journey occurs within the area occupied by the migrant's ethnic group, no major social problem occurs. Sometimes the journey transcends ethnic boundaries, and serious problems arise. First there may be problems related to adjustment to the tribal laws of the new social environment. Many tribes also do not favour the settling in of people from the other ethnic origins and various conflicts occur. As a result more and more people move to the cities of Accra and Kumasi where the population is very mixed and where the tribal issue is less evident. Even so a detailed study of the spatial distribution of population in the main cities will reveal a concentration of people of specific ethnic origin in particular sections within the cities. A classic example of this is the concentration of people from the Northern, Upper East, and Upper West Regions in the surburbs of Accra and Kumasi called Zongo.

D. Language, Religion and Education

Closely related to the effects of tribal and ethnic affiliation is the role of language and religion. Obviously, most migrants would want, and do move, to areas where they can communicate without much difficult, that is to areas where they have a common language or dialect. This is essential to let them secure jobs, socialise, and fit into the society. This also restricts migrants to specific areas and this is largely true for those with little or no education and who can only communicate in their own dialect. It should be noted that in the main cities of Accra and Kumasi, these effects are minimised as the population is very varied and as there is a tendency for most people to to communicate in English which is the country's official language.

Religious beliefs and practices command an influential position in the life of any Ghanaian. Even though most Ghanaians accept and believe in christian teaching and principles, many still practice traditional religions. It is, therefore, in the interest of most migrants to move to areas where their religious beliefs can easily be sustained and practised.

The statistical effects of education on internal migration have already been discussed. Education acts in various ways to determine the direction and volume of internal migration and urbanisation. In Ghana, most migrants are young adults who have just completed one of the levels in the educational system, mainly elementary and secondary. The graduates from the Ghanaian school, by and large, find their training incompatible with the employment opportunities in their usual locality of residence and are inclined to seek greener pasture elsewhere but mainly in the urban centres. A common response to why a person has not moved out of the village in Caldwell's survey was that he had not received any education (Caldwell, 1969).

Another way in which education affects internal migration and thus, urbanisation is the way schools and related educational facilities are distributed within the country. Zachariah and Conde (1981) show that Ghana is one of the few African countries where education is widespread. It is also interesting to learn that even though there are many schools in the rural areas and less developed regions, these are mainly first cycle or elementary schools. There exists much regional disparities in the distribution of second cycle institutions. Most secondary, commercial, and teacher training institutions are disproportionately concentrated in the more developed regions and urban areas. The result is that many first cycle school graduates leave the rural areas for the urban centres to seek further education. As they move to the towns where these secondary schools are located, increasing urbanisation occurs. Shaw (1975) explains that education acts as a motivational factor in that once a certain level of education is received, the migrant is motivated to move either to look for employment or search for better and improved education. This appears to be very consistent with the situation in Ghana.

E. Agricultural Practices

Socio-culturally, most Ghanaians earn a living from the land, as farmers, hunters, fishermen, firewood collectors, trappers etc. In 1984, 68.7 % of the population of Ghana lived in rural areas, where the main occupation is agriculture. As the population in these areas increases, more and more people are obliged to earn a living from the limited resources available for agriclture. Farms become fragmented, and holdings diminish in size, leading to reduced earnings. This further stimulates people to move to non-agricultural sectors of the economy. The non-agricultural sectors of the economy are found mainly in the more developed regions and urban areas, and this is where this category of migrants moves to.

Another detrimental aspect of land fragmentation is that it tends to affect agricultural mechanisation. It is economical to use improved seedlings, and mechanised farming on large tracts of land and some elders are becoming more reluctant to reduce the size of land holdings and encourage the young members to move to seek better living conditions elsewhere within the country. In this respect, Brown and Neuberger (1977:16) note that improvements in agriculture also could set migration in motion toward cities within countries experiencing such improvements, and this is largely true for Ghana. It must further be noted that movements to plantations and good farming areas have always existed in Ghana. Goldscheider (1971) shows the movement of migrants from the northern regions of the country to work in cocoa.

plantations in the south in the precolonial and colonial times, and this pattern still exists even though with less intensity. In addition, Hance (1970:30) points to the movement of labourers and other farm workers long before the partition of Africa. He refers specifically to the movement of Akwapim farmers in the Eastern Region of Ghana to nearby empty lands to continue with subsistence farming. The point here is that the Ghanaian worker or farmer will move to any where within the country where he can continue with his normal way of living. This further explains why rural-rural migration is predominant in the country (see table 3).

F. Entertainment and Health

A prominent, but sometimes neglected, social factor influencing the volume and direction of internal migration and especially city bound migration is entertainment. Lack of any meaningful entertainment has driven many people to the urban areas as a way of overcoming the problem of boredom. The rural areas of Ghana have no televisions, theatres, cinema houses, and night clubs. The absence of these amenities, it has been noted, creates a sort of worsening boring conditions in the less developed regions and rural areas, and that this boredom, in turn, drives people out to the areas where such facilities abound (Caldwell, 1969). It is true that the rural folk have druming and dancing; but this is normally performed on specific occasions . More city bound movements means increasing urbanisation, and through this the factor of entertainment also affects urbanisation.

With high morbidity and mortality levels, health is of prime concern to most Ghanaian governments and people. Crude death rate is over 20 per 1000, while infant mortality is also over 100 per 1000. The disparities in the distribution of health facilities by region and in urban and rural areas leaves much to be desired. Most hospitals and health centres are located in a few urban areas, especially the capital city of Accra and the regional capitals. Most rural and semi-urban areas have nothing at all, while a few other urban areas have clinics and health posts. The result of this has been the movement of some people to regional capitals and other urban areas where they are more likely to get proper health care and meet their health needs. Lack of finance prevents the government from taking appropriate measures to remedy the situation.

G. Economic Determinants

It is necessary to note, at this point, that several other factors, mainly non-sociological in nature, also act individually and jointly to influence internal migration and urbanisation. Of these, the economic factors are the most prominent. The statistical effects of one economic variable, employment, has already been discussed. The desire to take advantage of the existing employment opportunities in the urban areas is an important reason why people move from rural areas to those areas. Mabogunje (1972) writes: 'every year millions of West Africans leave their homes and kinsmen in search of profitable economic opportunities elsewhere.' Unfortunately, most of them arrive in the city only to realise that their objectives cannot be achieved.

There is, therefore, an inherent desire for higher income and this constitutes a major determinant of internal migration, population redistribution, and urbanisation, as discussed in the model proposed in chapter eight. Evidence from the literature indicate that rural/urban disparities in income is a norm with urban residents enjoying higher wages (see Caldwell 1969; and Todaro 1976). This is also true for more developed regions like Greater Accra where wages and salaries are comparatively higher than the case in all other regions.

Yet another economic factor is the uneven distribution of economic infrastructure and other economic development projects. Most economic development projects are located in Greater Accra Region with a few in Ashanti and Western. Most other regions, notably Volta, Northern, Upper East and Upper West, have very little, if any, developemnt projects at all. Within regions it is found that most of such projects are located in the urban areas to the detriment of the rural and suburban areas.

H. Rural Development and Political Factors

Rural development, involving some of the factors already discussed, is also an important determinant of internal migration, population redistribution, and urbanisation. United Nations (1979:35) notes that the government statement to the 1971 African Population Conference stated that the country had adopted as a first priority the development of rural areas as a means of limiting excessive rural-urban movements. This was to be achieved through the provision of basic amenities including good drinking water, electricity, roads, rural housing and industrialisation programs, and agricultural extension programs. The government also decided to make agricultural imputs readily available to farmers in order to attract more people to the land. Indeed in 1970, a rural electrification committee was set up, a rural development fund established, and a Ministry of Youth and Rural Development came into being to implement the government policies. The rural industries were mainly agrobased, and dependent on the raw materials available in the locality where the factory was situated.

These attempts at minimising rural-urban migration as well as movements from less developed regions to more developed ones failed largely because no comprehensive plan was formulated, while the government could not commit adequate funds for the projects. In addition, the approach was not comprehensive enough to include education. It has already been documneted that a large number of migrants move to take advantage of opportunities to further their education. Others move because the type of education they have received prepare them only for white-coillar jobs in urban centres and in more developed regions. Rural development must go hand in hand with changes in the school curriculum. It was not until 1974 that a new school curriculum, which emphasised local crafts and skills, was introduced. Even so it is rather recently that this new content of education is being accepted and implemented. Also, introducing mere rural development projects does not change people's perception and attitude to city bound migration. Most rural people still believe that they will be better off moving to the urban area and this psycholgical feeling must be eradicated through a proper population education program.

Finally political factors also influence internal migration and urbanisation, as some migratory moves have political undertones. Some people have been forced to move from their usual place of residence as a result of political decisions at various levels of government. Some people move from the rural areas just because they cannot get on with the chief. Sometimes government projects necessitate the implementation of resettlement programs. A case in point is the resettlement of hundreds of thousands of people following the building of the Volta River hydro electric scheme. The damming of the river has led to the creation of a massive man-made lake, and those settled there at the time had to be evacuated.

IX. Policy Implications

Internal migration and urbanisation in Ghana have serious implications for policy formulation and implementation. In order to identify the varying implications of each of internal migration and urbanisation, the discussion is presented in three sections, one for each of the two processes, and a third section where an appropriate policy is proposed.

A. Internal Migration

Since the attainment of independence in 1957, Ghana has had at least six governments. United Nations (1979) reports that successive governments in Ghana have attached much importance to the problems created by the spatial distribution of population in the country. At the World Population Conference held in Bucharest in 1974 and Mexico in 1984, the Government reiterated its commitment to halt the pattern of internal migration in the country. The United nations (1979) states further that the government expressed dissatisfaction with the growth of Accra as a primate city and the problems associated with it. This condition is not unique to Ghana. Adepoju (1988:132) points out that in 1982, 72 % of the African countries which responded to the United Nations fifth population enquiry expressed dissatisfaction with the existing population distribution patterns.

It is clear from the estimates prepared that Accra's population continues to grow unabated. The city's population increased from 337800 in 1960 to 564200 in 1970 and 859600 in 1984. In addition, Greater Accra Region continues to be the main migrant receiving region, having gained from all other regions in 1970 and 1984. An implication which manifests itself from the internal migration estimates is that the existing policy has failed. This is because that policy has not been able to check the undesired and disproportionate influx of migrants from the other regions to the Greater Accra Region generally, and the city of Accra in particular. The lessons from the estimates are, therefore, clear. The existing policy has been intended to restrain and divert unwanted movements to Accra, but such movements persist. Further, regions like Volta, Eastern, and Northern continue to lose more and more people to the southern regions. This means also that the the north-south migration pattern which existed in the colonial era and which has been documented by Goldscheider (1971) is still persistent even in 1984.

The 1984 Kilimanjaro Plan of Action on African Population called on African countries to establish programs of planned distribution and redistribution of population. This is aimed at eliminating the excess movement of people from rural and less developed areas of the countries to the urban and more developed parts of the countries. Such programs, it has been advocated, should be tied to the prevailing policies for human settlement and rural development (Adepoju, 1988). Indeed, rural development oriented strategies have been adopted and implemented in Ghana without much success as indicated in the findings of the present study. The issue, according to this dissertation, is at what point in time and development will migrants come to accept the fact that it is no longer worthwhile to move to urban and more developed areas. There is ample evidence indicating that most migrants do not get their expectations fulfilled when they move to the urban areas. Yet, as Wolpert (1965) discusses, they still adhere to their desire to move despite the negative feedback they receive. There is, unfortunately, a prevailing psychological feeling among recent and young school graduates that once they move to the urban area, there will be plenty of every thing. The problem is aggravated by the fact that even though they do not get what they had expected in the area or region of destination, very few of them return to the place of origin. This situation shows the need for a population education program which will emphasise some of these things (as pointed out later in this study).

Aside the movement of people to more developed regions, it is evident that most migrants move to adjoining as well as the nearest more developed regions. This presupposes that distance is a leading factor influencing migration in Ghana and that, by upgrading the status of semi-urban centres in particular regions, it may be possible to restrain some unwanted movement to Accra, and in the process, slow down the growth of Accra as a primate city. Such measures as the provision of basic socio-economic amenities, including electricity, good drinking water and some low cost housing may achieve some success, no matter how limited. This is especially true if it is borne in mind that during the entire study period, Ashanti and Brong Ahafo gained more migrants from the Northern, Upper East, and Upper West Regions than even Greater Accra. It is, therefore, implied that some unnecessary movements to Accra and the other major cities may be eliminated if developed projects are provided in specifically selected regions and towns.

Another expected result which has policy ramifications is the predominance of young males in the migration streams. This type of movement has resulted in the scarcity of farm labour as well as ageing farm labour in some areas, as farmers become old and as young school graduates refuse to take farming as a career. The ultimate result of this has been low agricultural productivity and production, food shortages, and increasing poverty among many farmers. This means that if migration policy is to succeed, then it should inculcate in the youth a willingness and an ability to stay in the area of origin by raising agricultural productivity, and by providing them with skills needed to work in the area. The point is that if school graduates can only do white-collar jobs, then they are more likely to move to places where such jobs prevail, and a new policy is needed to reverse this.

Yet another finding which has policy ramifications is that the proportion of the population enumerated in the region of birth continues to dwindle. If intraregional migration is included, it is seen that even a greater proportion of the population has moved from the locality of birth. The fact that this proportion continues to decline shows that the problem of migration is getting worse over time, as more people leave their place of birth over time and this is true for all regions except Greater Accra and Brong Ahafo.

The fact that there is a predominance of rural-rural migration implies that most migrants are able to satisfy their needs by moving to areas with similar conditions. In fact most Ghanaians are employed in agriculture which is carried out mainly in rural communities and involve shifting cultivation. This means that if modern or semi-modern methods of cultivation are adopted, rural-rural migration may be minimised. If farmers can easily obtain fertilisers and improved seedlings, it will be possible to cultivate the same parcel of land for many more years and this no doubt will reduce rural-urban as well as rural-rural migration where they are undesirable. The point is that if fishing gear is only available in the Greater

Accra Region, for example, then most fishermen in the nearby Volta and Central Regions may want to move to Greater Accra to get access to the required fishing imput. However, if such fishing inputs as nets can readily be acquired in the region of normal or usual residence, then the propensity to move may be low.

Besides, evidence from this study and the literature suggests that most graduates from elementary schools move into the city to look for white-collar jobs. This implies that the training they have received does not allow them to work in the locality where the training was received. This means further that educational objectives may have to be redefined and the school curriculum improved to include much practical content. One way of doing is to include in the school curriculum the arts, crafts, cultural practices, and skills required for farming and other industries located in that locality. The government is trying to meet some of these requirements by introducing a new structure and content of education. This new system has more practical content and tends to emphasise the aquisition of skills needed for work in the area where the school is situated. However the effects of this new educational approach on internal migration and urbanisation will depend on the successful implementation of the proposals. These effects may not be known until perhaps the late 1990s or even the next century, when many people would have graduated from the new system. With regards to the uneducated rural population, the education program should be geared at making them understand that it is no longer worthwhile to move to urban areas as job opportunities are lacking. It must also point out the other problems in urban areas including the inadequate housing and foods, and stress the benefits of staying in the rural areas. To make this work, the political economy of the country should be reviewed. Attention must be given to improving upon rural economies. The establishment of rural industrialisation programs may create jobs in those areas and when combined with increasing agricultural production, movement to urban areas by surplus labour in rural areas may be reduced. This is because the surplus labour released from agriculture as a result of rising agricultural productivity may be absorbed by these rural industries. If these industries are agro-based, then a regular supply of raw materials may be established.

B. Urbanisation

The trends and patterns of urbanisation in the country as a whole, and in the regions in particular, also have policy implications. The findings of the study indicate that the proportion of the population classified as urban increased especially during the 1960-70 decade, and that all regions recorded increases in the number of urban settlements. It is interesting to learn that the Northern Regions doubled its number of urban settlements, for example.

Since there has been a steady increase in the number of towns from 98 in 1960 to 189 in 1984, an urban policy must be developed in the light of the country's needs and resources. It is necessary to note that policy must not be directed at restricting the development of new towns for two reasons: First, even though the number of towns is increasing, most regions do not face the urban problems described in the previous chapter. The problems of inadequate housing, congestion, poor sewage and sanitary conditions are mainly found in Accra and to a lesser extent in Kumasi and Sekondi-Takoradi. The second reason is that the development of new urban settlements is necessary to halt the unwanted movement of population to Accra and the Greater Accra Region, and reduce the continuous growth of Accra as a primate city. In fact, an urban policy which will encourage the growth of existing small towns and the development of new towns in regions other than Greater Accra may be necessary to resolve some of the country's pressing urban problems (U N, 1984; and Kennedy, 1983). Indeed the need for such a policy is implied in the estimates of urbanisation obtained in this study. In this regard, attention must be focused on specific in which the number of towns is small. One trend which the study establishes is the increasing concentration of towns in particular regions, specifically Greater Accra, Ashanti, Central, and Eastern. Northern, Upper East and Upper West Regions continue to have very small number of towns, while many of their people continue to move southwards. It is, therefore, important to encourage the development of new towns in these latter regions. This is necessary to restrain and reduce the prevailing north-south movement of migrants.

A related policy implication may be adduced from the rank-size position of Tamale as well as its location. It has already been shown that Tamale ranked third in size in 1970 and 1984. By implication, this means that many people have been moving into that city from the nearby settlements and regions. This presupposes that if the country's administrative machinery is decentralised and basic socio-economic facilities provided, Tamale may be able to attract more southbound migrants and ease the situation in the southern cities of Accra and Kumasi. The problem associated with such a policy is that Tamale may also be overwhelmed with urban problems as its population grows rather rapidly from both natural increase and internal migration. Already, Tamale is a primate settlement in the north; it is the only settlement in the northern half of the country to be within the ten largest settlements in the country, and its rank-size position of third is very outstanding for the whole of the northern half of Ghana. Besides the town is already facing crisis in providing water and electricity to consumers. Some of these problems may be eradicated by implementing urban renewal programs which are absent in that town. It may, therefore, be more beneficial to encourage the growth of Wa and Bolgatanga, the capitals of Upper West and Upper East respectively. This will reduce pressure on Tamale and also help minimise north-south movements.

With regards to the proportion of the population classified as urban, the estimates show that most regions recorded large increases. It is again implied that urbanisation must only be encouraged in those areas where the proportions are not excessive. Specifically, it must be encouraged in distant regions where the said proportions are low. The projections of urban population also show that almost half of the country's population will be living in urban areas by the year 2000. Urban renewal projects must be initiated immediately to reduce the problem before it gets worse by the turn of the century. Given the host of urban problems which will have to be solved at that time, it is essential to introduce urban renewal programs as well as measures which may tend to slow down the rapid urbanisation well in advance. Successive Ghanaian governments have attempted to resolve the urban issues by accommodating the problems through the provision of ad hoc solutions, instead of lasting and effective solutions. The urban problem has causes and consequences. The dilemma has been whether to eradicate the problem by attacking the causes or attack the consequences or symptoms. Unfortunately, the effort in Ghana has been directed at mainly the symptoms, with little attention given to the causes. Efforts at eliminating the causes have essentially been mere rhetoric until recently when a new school curriculum and some rural development programs adopted. The present study asserts that the only way to ensure the total elimination or minimisation of the pressing problems is to tackle both the causes and the symptoms at the same time. The causes of urbanisation are deeply rooted in the poor socio-economic conditions and general stagnation in the rural areas and less developed regions. There is definitely a need for a policy which will help alleviate these problems.

Urban policy must also include a committed effort by the government of Ghana to encourage and fund further research into urbanisation and its associated problems. In fact national development policies do not give full recognition to the spatial distribution of population and the locational aspects of population growth. These aspects of the population are generally neglected and only casually mentioned in the development plans, as manifest in the Ghana Five-Year Development Plan of 1975 (Ghana Ministry of Economic Planning, 1975). Urban research must also focus on the uniqueness and characteristics of regions, large settlements, identification of the exact components of urban growth, as well as the causes and consequences of urbanisation. Research must also be carried with a view to finding out the best urban renewal programs and other solutions to the urban problems of the country.

C. A Proposed Population Policy

The formulation of an appropriate internal migration and urbanisation policy is difficult. This is because there is a great variety of causes and consequences which must be addressed; It is also due to the fact that most migrants, for example, consider migration a means of improving upon their status, and any attempt to stop this may be considered as an infringement on individual rights and freedoms. On the other hand unnecessary movements, especially rural-urban movements, have tended to create labour shortages in the areas of origin and unused or underutilised labour in the areas of destination. So that in attempting to suggest a useful policy, it is essential to draw a balance between these two dimensions of the problem.

The study suggests a policy that tackles both the causes and the consequences. The policy being advocated here is one which is comprehensive enough to include a population education program, the provision of various urban renewal socio-economic projects, rural industrialisation and development strategies, decentralisation of administration and government machinery, and an equitable and fair distribution of the country's little wealth among the various regions. Such a policy must also include the provision of more second cycle institutions in less developed regions and improvements in school curriculum.

It has already been mentioned that many school graduates migrate to the urban areas mainly because of the belief that once the city or the more developed region is reached, all will be well. This underscores the need for a vigorous population education program which should endeavour to address this question of belief. What is being proposed here is a program which will draw attention to the problems of the urban areas and the good things in the rural areas and less developed regions. The lack of opportunities in intended occupations in the urban areas must be stressed in such an educational program. Most migrants to more developed regions and urban areas move in order to secure white-collar jobs, and it is the belief of the present study that if the government launches a detailed education pointing out the virtual absence of job opportunities in these areas, a measure of success may be achieved.

It goes without saying that some of the urban problems can be eliminated through this population education program. Urban residents must be educated to avoid waste of water and electric power, to adopt a more positive attitude towards personal hygeine and health, and to strive to attain maximum benefits from the existing urban facilities. A good population education program must also educate urban residents about the need to discourage their friends from coming from other parts of the country to come and join them.

On the same note, the population education program being suggested here must also point out to residents of rural and less developed regions the best way to maximise benefits from the little resources available. It must highlight existing benefits as well as potential ones and educate the residents about how to derive maximum benefits and live confortably without moving to a more developed region or urban area. There are a lot of potential benefits in the rural areas. The development of rural crafts and arts, as well as the existing rural industries are all areas where school graduates can work in addition to farming, hunting, trapping, fishing and so on. Most rural-urban migrants do not become aware of these benefits and move out, and perhaps a population education program pointing out these avenues may help reduce the volume of unwanted migration and increasing urbanisation.

Many Departments, Ministries, and Agencies may be involved in the implementation of such an educational program. The Ministries of Education, Health, and Information, the Ghana Broadcasting Corporation, Ghana National Family Planning Program, Information Services Department, Institute of Adult Education, may have individual and joint roles to play in ensuring the success of such an educational program. Because of the interrelationship of demographic processes, the role of the Ghana National Family Planning Program is very important. The Information Services Department, with its mobile service which extend into rural communities, will have to ensure that the program reaches a large portion of the country as possible. The Institute of Adult Education can integrate this into its program, while the Ghana Broadcasting Corporation can have special broadcast on radio and television about the growing problems resulting from the continuous movement of people from less developed regions to Greater Accra and the other more developed regions.

The population policy should also identify the specific urban renewal projects necessary to minimise particular urban problems in each region. Plans are already underway to extend power supply from the Akosombo Hydro Electric Project to the Brong Ahafo, Volta, Northern, Upper East and Upper West Regions. It may be surprising to learn that even though Ghana supplies electricity to neigbouring countries, especially Togo and Bennin, large parts of the country are without electric power. In Tamale, for example, electricity is readily available a few days a week. Similar conditions exist with regards to the supply of good drinking water. In many of the large urban centres, water is a scarce commodity. Urban renewal projects involvoing the expansion of pipe lines, and provision of several more public water outlets may go a long way to reduce the water problems of urban areas.

Similarly, the lack of adequate housing and transportation facilities presents serious problems in many urban communities. Urban renewal programs should include as an integral component a well defined housing need and the type of accommodation which is likely to be provided to overcome this problem. Housing projects which tend to use local materials are less expensive. Several low cost housing plans have beeen unveiled by the State Housing Corporation in the past, but the houses produced had, unfortunately, gone to rich, instead of poor, people. The proper maintenance of existing infrastructure and the building of new roads and related infrastructure will enhance urban economic conditions, generate more money through the linkage effect, and result in the provision of more amenities. The problem is that even though the usefulness of the urban renewal programs is immense, the country is too poor to provide these amenities in the required quantities and qualities.

Urban renewal projects should not be provided at the expense of rural areas. Indeed rural development and urban development should go hand in hand to halt the existing pattern of internal migration in the country. A neglect of rural development will only encourage more movement from rural to urban areas, and from less developed to more developed regions. Rural development programs should include the provision of more low cost housing, good drinking water, electricity, some infrastructure like what is called feeder roads which connect small settlements to large roads. A rural industrialisation program should also be part of this rural development program. Successive governments in Ghana have implemented some rural industrialisation programs, mainly involving agrobased industries. Cottage industries using locally produced raw materials have been built in some rural areas to provide employment in those areas. The regression analysis shows that employment is the single most important factor influencing internal migration and the accompanying urbanisation. If policy is developed such as to create more employment opportunities in less developed regions, the chances are that some unwanted movements would bo averted.

Rural development should include improvements in agriculture. Since 65 % of the country's labour force is employed in agriculture, any improvements in this sector of the economy will be of immense benefit. Besides, if agricultural productivity is increased basically from the provision of improved seedlings, fertilisers, and some mechanisation, some people may be attracted into farming. The surplus labour which may be released from increasing mechanisation of farms may be employed in the agrobased industries which may be sited in the locality as already suggested. The policy being espoused here should provide for the commitment on the part of government to supply farmers with agricultural imputs readily and timely and to ensure that farm products reach markets or areas where they are most needed. This should complement the proposed population education program which is tended to draw the attention of recent school graduates to the opportunities in their regions of usual residence. If school graduates see the potential benefits of adopting farming as a means of living, they may be more attracted to it, and this will reduce rural-urban migration and urbanisation.

Yet another area for policy consideration is the decentralisation of government machinery. As at now, the situation is that all Departments and Agencies have their headquaters in Accra, and this has resulted in short and long term movements to the city of Accra for most things. There has been much talk about the need to decentralise administration in the country, including the granting of a certain measure of autonomy to regional offices of various government departments and organisations. Indeed, a National Decentralisation Committee has been set up to identify the areas where it will be possible to have decentralisation. Decentralisation should go with a fairer distribution of the country's income among regions. This would allow for each region to have a certain amount of amenities, some level of employment, schools and so on. At the moment the situation is that the bulk of the country's wealth, public and private, is disbursed in a few cities, mainly Accra and Kumasi.

The proposed internal migration and urbanisation policy should include a well defined plan to provide more second cycle institutions in many regions, as well as improvements in the content of education. What exists now is the situation in which some regions, like Greater Accra, Ashanti and central, have a disproportionate share of the second cycle institutions in the country. This has adversely affected the direction of migration within the country, with migrants moving to specific regions to further their education. Regions which require more of such institutions include Northern, Upper East, Upper West, Volta, and Eastern.

Related to the equitable provision of second cycle institutions of learning is the need to improve upon the content of education in all elementary schools or first cycle institutions. The present content of education prepares graduates for white-collar jobs which are virtually nonexistent. A new content of education with much emphasis on practical training will provide school graduates with some skills which will make them employable. The current content of education, it has been argued, alienates graduates from their culture, so that few of them ever think of adopting agriculture and the making of local art and crafts for a living. A new content of education which emphasises local crafts and culture, and which has more practical content has been introduced recently. According to this new school curriculum, the teaching of local crafts and the provision of skills required to work in industries located in the area where the school is situated will be stressed. Carpentry, masonry, building technology, shoe-making, and related training which will equip graduates with new skills feature prominently in the new curriculum. A policy on migration and urbanisation which is comprehensive enough to include all these is more likely to produce desired results than the ad hoc approaches which governments have hitherto adopted.

In talking about policy, it must also be mentioned that several other measures or options are available. The provision of tax rebates and grants to firms established away from the main cities, and payment of relocation and moving expenses and allowances for workers willing to relocate could be adopted. It has even been suggested that retraining expenses should be paid for by the government, especially where people are willing to retrain in occupations which will allow them to work in less developed regions. The establishment of green belts, the building of new capitals and towns have also been proposed, while restrictions on the establishment of new firms in already congested areas may be aplied.

Plausible as they are, it must be cautioned that in a less developed country like Ghana, most of these are extemely difficult to implement. It is easier to withhold permits for building manufacturing concerns in specific regions or towns, but extremely expensive and difficult to build new towns and capital cities, for example. Even so it should be realised that some industries would have to be sited in particular cities and regions to take advantage of existing linkages, closeness to raw materials and markets. If such industries are to be located in more distant regions, then the government would have to compensate them for the increased transportation and related cost. The problem is that adequate finance is not available to meet these needs.

The implementation of the policy is equally important as its formulation. Quite often, developing countries formulate good policies in various fields, but these policies fail to produce the desired or expected results because of poor implementation. The stated objectives of any population policy may be achieved if the policy contains a well defined plan of action as to how it should be implemented.

It is envisaged that several Ministries and Departments will be involved in the implementation of the proposed policy on internal migration and urbanisation. Some Ministries, like Education and Information, are already involved in a way in implementing existing policies. There is need for a coordinating Ministry to oversee the work being done by individual Ministries and Departments, to avoid duplication, make the program efficient, and provide a sort of leadership. A Ministry in point is that of Finance and Economic Planning which is in a position to supervise the implementation of the policy. Regional Administrations may be given a degree of autonomy as they are definitely aware of problems which may be unique to their regions. The point is what may be a major problem in one region may not be so serious a problem in another region. For example, the question of primate city may not arise in the Upper West or Volta Regions even though it is a very serious problem in Accra. Government commitment must transcend mere rhetoric. Enough financial, material, and human resources must be committed to the formulation and implementation of the policy, and this must be done within the limited resources of the country.

It should, further, be noted that Ghana and some other African countries have indicated their willingness to adopt some of the measures recommended in the proposed policy. United Nations (1988:208) reports that Ghana has reiterated its commitment to resolve the problems of internal migration through the adoption of the following measures: Slowing of primate city growth, promotion of small towns, rural development strategies, and regional development policies for lagging regions. These measures may correct the inbalance in the provision of development projects among regions and between urban and rural areas and, thus, change the pattern and direction of internal migration.

In Senegal, Togo, Nigeria, and other West African countries, the United Nations reports of the adoption of similar approaches as a means of reshaping the direction of internal migration. In addition, Ivory Coast and Nigeria have adopted the relocation of national capital as a way of slowing the primate city growth of Abidjan and Lagos respectively for the two countries. Yammosoukrom is the new national capital of the Ivory Coast, and Abuja the new national capital of Nigeria. In a country like Ghana, limited financial resources and pressing other problems inhibit the building of a new national capital. The important role of rural development in reversing the direction of internal migration is seen in the fact that the United Nations (1988:208) attests that most African countries have adopted rural development strategies as a means of influencing the pattern and direction of internal migration.

X. Chapter Eight: A Theoretical Model for the Study Migration and Urbanisation

From the review of literature, migration and urbanisation estimates and patterns in Ghana, and other findings of this study, it is possible to propose a theoretical model of migration and urbanisation which may be applicable to many developing countries. The proposed model is based on the principle that sociocultural, economic and political development work through a number of variables, to increase the propensity to migrate and, hence, influence internal migration and urbanisation (table 65).

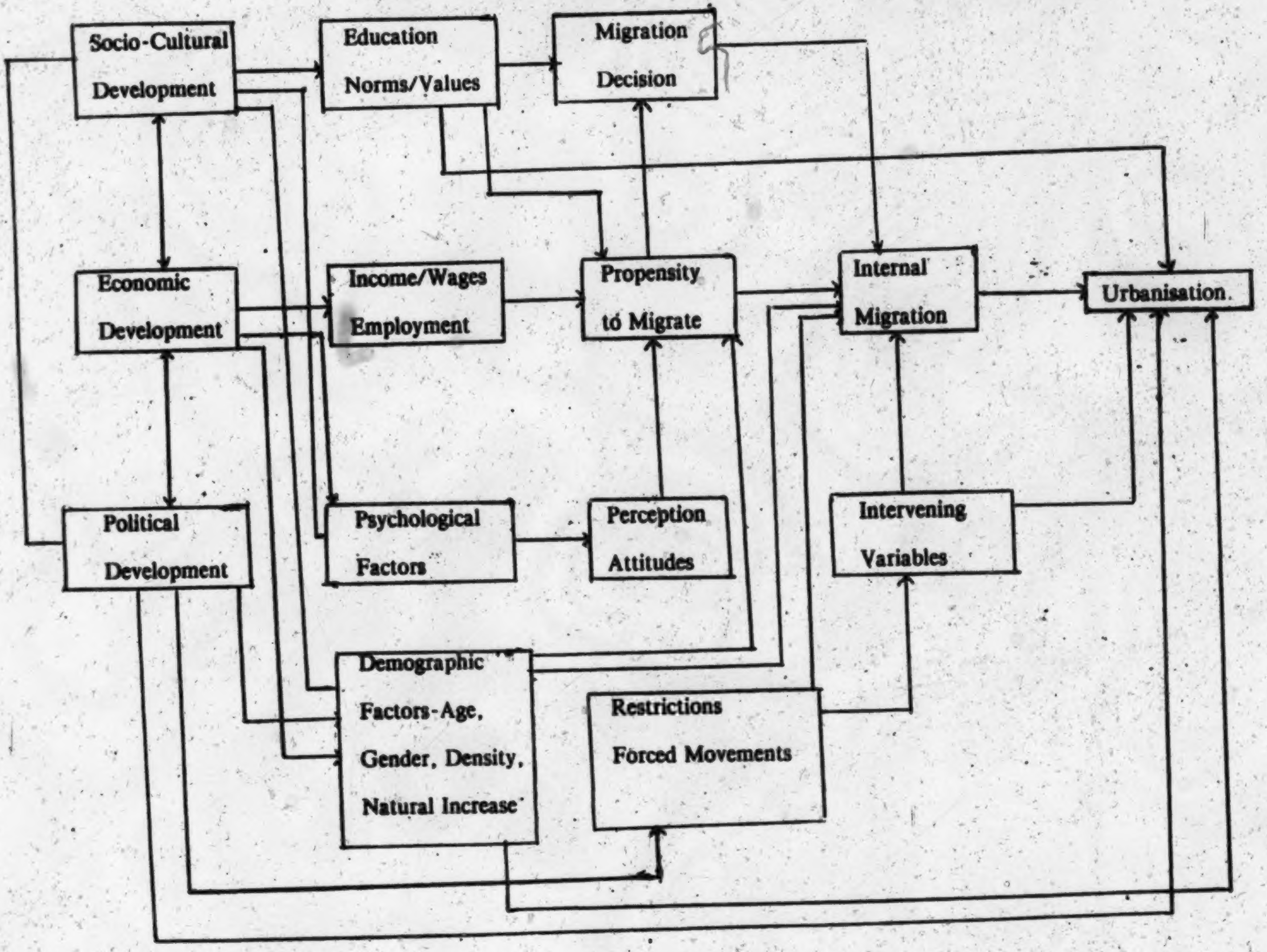
A. Socio-Cultural Developments

According to the model, as socio-cultural development occurs in any developing society, more people become educated, norms and values become modified and lots of changes occur.

More educated people means an increase in the number of people with skills (no matter how limited) which will allow them to work in urban and non-agricultural economies. Since most non-agricultural industries are located in the more developed regions and urban areas, the model presupposes that socio-cultural development will lead to an increase in movements from less developed regions and rural areas within individual countries to more developed regions and urban areas.

Another way in which education affects the propensity to migrate and internal migration lies in the tendency to locate a disproportionate number of educational institutions in urban areas and specific regions. This results in the situation where a certain category of migrants moves to particular regions or settlements to further their education or acquire more skills. This is especially true with the distribution of second cycle and third cycle institutions within many developing countries. Most secondary and tertiary institutions are located in urban areas and more developed regions; the residents of less developed regions and rural communities can get these types of education when they move out of their area of usual residence, at least for the duration of their study. In this way, education also affects the propensity to migrate. A person who wants to further his education may have a high propensity to migrate. A person who has completed a certain level of education and, thus, acquired some skills may also have a high propensity to migrate.

Table 65. A Framework For the Study of Internal Migration and Urbanisation


Socio-Cultural Development
Education Norms/Values
Migration Decision
Economic Development
Income/Wages Employment
Propensity tó Migrate
Internal Migration
Urbanisation.
Political Development
Psychological Factors
Perception Attitudes
Intervening Variables
Demographic Factors-Age, Gender, Density, Natural Increase
Restrictions Forced Movements

Once they have completed a certain level of education, school graduates acquire some skills which encourage them to move to urban areas and more developed regions with a view to obtaining white collar or non-agricultural jobs. As a result internal migration occurs, and since most of them move to urban areas, urbanisation also occurs from this pattern of internal migration. School graduates are encouraged to move to urban areas because the training they receive discourages them from working on the land and, this increases their propensity to migrate.

Social and cultural development may also influence the existing norms and values. This may take different forms. For example, the general belief that conditions are better in the area of destination may be affected and may change. Also, once people become educated as a result of socio-cultural developments, their cherished norms and values may become adulterated. This means that they may consider certain aspects of the existing norms and values obsolete, and may abolish them or improve upon them. So that it is possible for socio-cultural developments to result in the situation where the norms and values which favour migration may be abolished.

B. Economic Development

The effect of economic development on internal migration and urbanisation is similar, in a way, to the effect of socio-cultural development. As economic development occurs in a developing country, more economic infrastructures, industrialization and employment opportunities become available. The availability of these factors constitutes a pulling factor which draws or attracts many migrants. Another concomitant of economic development is increasing wages and salaries. Again, most people, especially potential migrants, are attracted to areas where they are more likely to get higher income and, as they move to such areas, internal migration results.

Since increasing employment opportunities, improved socioeconomic infrastructures and higher wages and salaries occur mostly in urban areas, there is a tendency for migrants to move to towns and cities, which, in turn, results in increasing urbanisation. Indeed the results of the regression analysis corroborate this view, and show that net migration explains a substantial proportion of the variance in urbanisation among the various regions in Ghana. This, the proposed model concludes, may be true for other developing countries. The point is that empirical evidence from most developing countries suggests that most migrants move to towns and more developed regions on the basis of expected, rather than actual, income (Segal, 1972). It is a general belief among rural residents in most developing countries that urban wages are higher and they expect to get more income when they move to the towns and cities. If, as a result of economic development, which occurs largely in urban areas and more developed regions, high wages and salaries become prevalent in specific regions or settlements, migrants will be attracted to move to those regions or settlements. It must also be noted that improved economic conditions may further affect the provision of education, health care and other social programs and thus enhance the effects of socio-cultural development on internal migration and urbanisation.

It must be noted that economic development has more effects on migration and urbanisation. The regression analysis shows that employment has been the single most important determinant of internal migration in Ghana. To the individual migrant, the decision to move is determined by his simple calculation of the economic gains and losses as determined by what he expects to earn when he goes to work in the urban areas.

Sight should not be lost of the fact that the socio-cultural and economic variables also work through a number of intervening obstacles to affect internal migration and urbanisation. Among these are distance, topography, transportation, disease, hostile population, harsh climate and so on. Some of these intervening obstacles have been identified by Lee in 1966.

C. Political Development

Political developments in a country may influence the nature and direction of internal migration as well as urbanisation. The role of political factors may be direct or indirect. The pattern of internal migration may be influenced when politicians enact laws restricting movement to or from specific regions or settlements, make laws which compel people to move to or move out from specific settlements. A case in point is when the Government of Ghana enacted an Act of Parliament which forced hundreds of thousands of people to move from the banks of the Volta River, following the construction of the Akosombo Hydro Electric Project in the early 1960s. Similar examples may be cited for Nigeria and many other countries.

Political factors also influence socio-cultural and economic development. Politicians may initiate programs which will result in socio-cultural and/or economic development which in turn influences the propensity to migrate, and the migration decision-making. In addition, in most developing countries, the decision as to where educational institutions, health facilities and government institutions should be located is made by the politicians so that the political factor is directly and indirectly a very powerful force in determining the pattern of internal migration and urbanisation. The model also accepts that since laws may be promulgated to designate some settlements as towns, the political factor has a direct effect on urbanisation.

It should further be pointed out that the exogenious variables in the model do not in reality work in isolation. Socio-cultural developments may result from, and even influence, economic and political development. On the same note, economic development may influence, and be influenced by, socio-cultural and political developments and so on. In addition the effects of socio-cultural, economic and political development on internal migration and urbanisation may be direct as well as indirect through their effects on education, norms and values, health care, incomes and so on.

D. Psychological and Demographic Factors

Furthermore, socio-cultural, economic and political developments work individually and jointly to influence various psychological and demographic factors which affect internal migration and urbanisation. The psychological factors which have an influence on internal migration and urbanisation include the perception and attitudes of potential migrants as regards internal migration. Specifically, there is a serious, but often neglected, psychological factor among rural school graduates that, once the city is reached, a good job will be obtained, more income earned and all problems overcome. This factor, which is difficult to explain, partly explains the rush of most young school graduates to urban settlements in many developing countries. Segal (1972) and Caldwell (1969) have also documented that even though many migrants do not obtain what they had hoped for and become disillusioned in the city, only very few return. Very few actually return basically because there is a psychological factor of self-defeat among migrants when they return to the area of origin, usually the village. The point is that socio-cultural, economic and political developments may influence people's perception and attitude, as well as other psychological factors.

Also, there are many demographic factors which also affect internal migration and urbanisation. These include age, sex, total population, population density, and natural increase. The effects of some of these demographic indicators on internal migration and urbanisation have been seen in the regression analysis. Empirical studies in several developing countries reveal that most migrants are young adults, usually males. Ravenstein has asserted that females predominate short distance movements, and even though this may not be completely true in Asia and Africa. The role of natural increase also affects internal migration and urbanisation. Since in most countries, a settlement is designated urban on the basis of the total population, a higher rate of natural increase may result in increased urbanisation, for example. In addition, higher rates of natural increase and high total population have resulted in higher population density in many agrarian societies, exerting excessive pressure on the land, and leading to fragmentation of land holdings. This fragmentation of land holdings, it has been noted, has tended to discourage school graduates from going into agriculture, leading to an influx of young school graduates into urban areas.

Again, it goes without saying that social, cultural, economic, political and related developments will individually and severally affect the demographic variables and through that internal migration and urbanisation. Improvements in social, cultural and economic conditions may influence societal norms and values related to fertility and thus rate of natural increase and total population which, in turn, may influence migration and urbanisation. In a similar way, social and economic change may result in more females in educational institutions and employment. More females in education and employment means a possible reduction in fertility, rate of natural increase and total population. Thus social and economic changes are likely to influence demographic variables which may then influence the patterns of internal migration and urbanisation.

XI. Chapter Nine: Summary and Conclusion

A. Summary

Throughout this dissertation, an attempt has been made to provide estimates of internal migration and urbanisation for Ghana from incomplete data. The results show that the population of Ghana is very mobile or has a high propensity to migrate. Greater Accra continues to be the major migrant receiving region, as evident from the estimates obtained from all the different methods. The Volta, Eastern, Central, and Northern are some of the major migrant sending regions.

The results of the study point out that distance has an inverse relationship with internal migration. Most people, according to the interregional migration estimates, move over short distances indicating much movement between adjacent regions. The study brings out a major finding that rural-rural migration is predominant in Ghana. Another finding of the study is that for every major migration stream, there is a corresponding counterstream. This is true for all regions, even though the number of people involved in each stream is different, and even though the characteristics of each stream and counterstream vary. The results also attest to the validity of the popular view that young people predominate migration streams.

With regards to urbanisation, it is clear that Greater Accra continues to have the country's largest city, the largest proportion of the population classified as urban and is, therefore, the most urbanised region. The Eastern, Ashanti, and Brong also have a large proportion of urban population, while the regions with low urban proportion include Northern, Upper East, and Upper West. The first position in the rank-size distibution of settlements in Ghana was always taken by Accra during the entire study period. Kumasi, in the heart of the country, took the second position, while Tamale ranked third in size in 1970 and 1984. It is interesting to find that Teshie, a suburban settlement near Accra, ranked fifth in 1984 and eighth in 1970. If it is borne in mind that Teshie was only a small settlement in 1960, it is realised how rapid its growth has been. It goes without saying that the main reason for this rapid growth is that Teshie lies between Accra and Tema, and has been settled by migrants.

With regards to the determinants of internal migration and urbanisation, the study points to the importance of several factors. The analysis confirms that internal migration is a function of demographic, social, and economic factors. Indeed the statistical effects of such demographic factors as population growth, social factors as education, and economic factors as economic activity rate or employment have been found to be significant.

Net migration and population growth are able to account for urbanisation. Urbanisation is also explained by population density and net migration. Other factors which tend to influence the volume and direction of internal migration, as well as urbanisation include family ties, remmittances, availability of friends and relatives in urban areas, employment opportunities, and expected wages.

B. Areas for Further Research

This dissertation has attempted to provide estimates of internal migration and urbanisation by a number of methods, using basically census data. The study accepts the limitations of the methodology and data employed in the study and wishes to make the following recommendations for further research.

To ensure the elimination of inadequate data, there is a need for actual field survey of internal migration in Ghana. The sample of such a study should be drawn from a universe which should include both rural and urban populations. The questions administered should include items which will provide for the collection of information on why some people do not move as well as reasons for migrating, and the consequences of migration. Such an empirical study should examine migrants by duration of residences and the number of moves in the last five or ten years. Interesting results which are not available in this dissertation may outcrop.

Indeed at the 1988 African Population Conference, it was suggested that individual countries should sponsor field studies in migration. One of the leading proponents of this view, Professor Prothero, went further to ask for a world migration survey. There has been a world fertility survey and a world migration survey will not be out of place, given the host of problems associated with internal migration and accompanying urbanisation. In addition, because of the interrelationship of processes, a world migration survey will enhance our understanding and knowledge of other demographic processes as well.

Another area where further research is needed is the migration pattern of various segments of the population. There is ample evidence in the literature, corroborated by the results of this dissertation, that migration streams have more young people, and also that migration pattern is different for various age groups of the population. In most parts of the developing world, migration studies by age tend to stress the predominance of young males. There is a need to examine migration of other segments of the population; specifically, a study of migration of the elderly may provide interesting results. The findings of this study indicate that migration of the elderly exists in Ghana, even though the number of people involved is smaller than that of the young. The point is that it is necessary to study migration of the elderly to determine its nature, levels, pattern, and trends. Such a study should also provide for the collection of information on the composition of the elderly migrants; research should be made to find out if more retirees are involved, whether males predominate, and whether elderly migrants move to their localities of birth or prefer to settle in specific cities or areas after retirement.

The impact of rural-urban migration has overshadowed the effects of other forms of migration. Indeed urban-urban and urban-rural forms of migration are hardly mentioned in the literature on internal migration in Ghana and other African countries. This dissertation recommends further research in these areas to throw more light on the issues involved, and to allow for the formulation and implementation of required policies. It is normal to expect that many people enumerated as life time migrants in specific cities might have moved in from other cities or suburban areas. Censuses, as noted earlier, do not provide information on previous residence or movements of respondents; so that an appropriate way to get this information is to carry out specific surveys.

It is further recommended that an additional study be made to determine the substantive influence of such variables as education, entertainment, cultural practices, family ties, employment, expected wages and salaries on migration. The last serious study of this kind was Caldwell's study in 1960. It has been about three decades since this last study, and one does not know the present situation. In particular, it may be interesting to find out if the adulteration of culture, resulting from increasing proportion of the educated population , has caused changes on the effects of cultural practices, norms, and values on the direction and volume of internal migration and urbanisation.

Evidence from the literature suggests that a major overall objective of migration is social and economic development. It is necessary to find out if such an objective is being met in Ghana. The study should be at both the micro and macro levels; micro level study will determine if individuals are achieving an overall improvement in their socioeconomic development as a result of migration. Macro studies will provide this information for the country as a whole and for broad subgroups of the population.

An interesting, challenging and equally useful exercise will be to extend the theme of the dissertation and study interdistrict migration in Ghana. Lack of appropriate data prevented this type of study in the dissertation and a further study of the topic may be very useful. This could be done for specific regions or for the country as a whole and for various age-sex groups of the population. In a country where rural-rural migration predominates, a study of interdistrict migration is more likely to provide beneficial and interesting results. It has also been argued that internal migration patterns, as they exist at present, results in shortage of farm labour in the regions of origin and surplus labour mainly in the regions of destination. There is a need for more studies in this area to allow for the proper documentation of the exact effect of the pattern of internal migration and urbanisation on the availability of labour.

With regards to urbanisation, the present study could not fully decompose urban growth into its main components of natural increase, migration, and reclassification of settlements as urban. The dissertation recommends further research in the decomposition of urban growth to pinpoint the contribution of each component. This will enable policy makers to obtain the information for the formulation of an effective policy.

Another area where more research may be needed is the consequences of urbanisation. It is essential to establish more recent facts about the problems faced by individuals, cities and other urban centres, as well as the country as a whole. It is interesting to point out that much of the literature on urbanisation has tended to concentrate on the undesired or negative consequences of urbanisation. The good aspects are hardly mentioned. Further research in this area, especially where attempts are made to identify the positive side of urbanisation may be very useful.

In addition, it is necessary to carry out further studies to find out which of the solutions offered for solving urban problems will be more appropriate. Suggested solutions include establishing green belts, building new capital cities and other towns, urban renewal projects, encouraging the establishment of new industries in specifically defined areas, tax rebates and so on. Given the country's limited financial, human, and material resources, it is of utmost importance to carry out research which will identify the approach that is likely to provide maximum result at lowest cost or so.

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Appendix 1 Population by Region of Birth and Region of Enumeration, Ghana, 1984

Region of Enum	Sex	Region of Birth West	Central	G Accra,	East	Volta	Ashanti	B Ahafo	North,	U East	U West
West	M	400253	27545	7634	23328	11219,	19158	4992	7451	4129	2689
	F	466059	28688	5682	13106	7505	14676,	2901	3180	1270	2270
Central	M	16469	436864	9543	25123,	11217	24632	4961	8805	5781	3361
	F	16284	484102	9179	24339	11592	18574,	3869	4403	1753	3177
G Accra	M	35933	36359	313005	94210,	59393	45614	6385	18965	8671	4706
	F	30322	37055	369773	89867	53188,	30305	4352	6997	3387	4312
East	M	15970	17629	26720	669338	50815,	19158	3631	8128	6194	3137
	F	17407	14941	27536	710168	48415	14664	2901	4453	1693	2723
Volta	M	1996	2204	6871	17047	496168,	3649	1815	9843	4955	2913
	F	2246	1793	6693	14978	532562	3910,	1451	7683	2963	4539
Ashan	M	20961	20383	9543	43965,	10559	741687	24507	44027	28077	15461,
	F	21899	21516	10053	43061	12274,	840708	25629	26079	16511	11121

B Ahafo	M	4491	4958	3435	13469	8579,	41965	400738	31835	20645	11652
	F	4492	5379	3060	11233	6819	40080,	434829	20991	12277	6808
North	M	1497	2206	2290	5383	5939,	7298	3177	533737	2890	1569
	F	1685	2391	2623	3744	4773	6843,	2901	549572	2540	2950
U East	M	998	1102	1527	2692	3300,	5474	2269	7451	327842	1568
	F	562	598	1311	1872	2046	2933,	1934	5089	378058	3632
U West	M	500	1651	1146	2681	2642,	3649	1362	7084	3716	177020
	F	561	1194	874	1873	2728	4874,	2803	7632	2905	185418
All Regions	M	499068	550901	381714	897236,	659931	912284	453837	677331	412900,	224076
	F	561517	597657	437084	914241,	681898	977567	483570	636079	423357,	226950

Source: 1984 Population Census Data

Appendix 2 Population by Region of Birth and Region of Enumeration, Ghana, 1970

Region of		Region of Birth									
Enum	Sex	West	Central	G Accra,	East	Volta	Ashanti	B Ahafo	North,	U East	U West
West	M	301826	26100	5374	16789	8336,	15458	3243	5379	3778	2287
	F	329806	28105	4217	13057	6542	11030,	2238	2373	1133	1887
Central	M	10947	326602	6060	18933,	9401	17431	3658	6065	4261	2578
	F	11608	356894	5154	15959	7996	13482,	2735	2900	1384	2307
G Accra	M	21072	23763	209117	64938,	40447	21957	3344	7368	5066	2916
	F	18521	22637	223903	63734	36932,	16102	2285	3757	1793	2989
East	M	12029	13564	17464	489022	37431,	13955	2699	5825	4405	1905
	F	11212	13703	16906	526624	34168	11701	2289	2688	1283	2137
Volta	M	1629	1836	4596	11634	389120,	3710	1115	5445	3744	2155
	F	1474	1808	4512	11627	429183	3503,	1088	4785	2284	3807
Ashanti	M	14347	16179	6297	30236,	13535	538081	15882	28292	19451	11198,
	F	14302	17481	5798	29649	10968,	590068	16138	16428	11294	6503
B Ahafo	M	3625	4087	2272	10462	9307,	30576	262284	20810	14307	8237
	F	2974	3634	2086	9115	7545	28684,	281240	12044	8280	4768
North	M	1344	1516	1579	2324	4515,	6183	2200	344162	1898	1093

	F	1685	982	1201	1226	3446	4887,	1859	337974	1752	2123
U East	M	924	1042	1086	1598	3103,	4251	1512	4485	230583	1302
	F	469	573	585	847	1645	2332,	887	3336	266959	2854
U West	M	533	600	625	919	1789,	2447	872	4140	2609	128488
	F	781	955	975	1412	2740	3887,	1478	4337	2070	166258
All	M	368276	415289	254470	646855,	516984	654049	296809	431971	290102,	162159
Regions	F	392134	446991	265362	673799,	541165	685676	312237	390622	298232,	166258

Source: 1970 Population Census Data

Appendix 3 Population by Region of Birth and Region of Enumeration, Ghana, 1960

Region of		Region of Birth									
Enum	Sex	West	Central	G Accra,	East	Volta	Ashanti	B Ahafo	North,	U East	U West
West	M	223427	10865	3532	9931	5531,	7064	567	4342	3618	2378
	F	243452	11364	2698	7731	4264	5154,	364	1968	1630	1088
Central	M	20489	299573	4316	12137,	6760	8634	692	5308	4423	2907
	F	19172	322886	3432	9839	5427	6559,	464	2505	2087	1371
G Accra	M	8341	10193	129609	30188,	16682	7518	803	3545	2954	1941
	F	6261	7968	137624	28614	14243,	4713	375	1969	1639	1098
East	M.	9632	11772	12899	406702	27233,	9139	909	5874	4895	3217
	F	8976	11425	13151	435706	24530	7159	600	2588	2157	1418
Volta	M	821	1004	2279	7117	315629,	1848	380	3613	3011	1978
	F	734	935	2090	6935	344593	1598,	361	3082	2569	1688
Ashanti	M	10706	13086	4363	23986,	9138	385270	8202	19384	16153	10615,
	F	10615	13509	3977	23166	9360,	420965	8013	9573	7978	5242
B Ahafo	M	2396	2929	1677	6798	3753,	20996	206843	10572	8810	5790
	F	1933	2460	1490	5597	3142	18755,	215974	5125	4271	2806
North	M	498	609	691	959	1986,	2229	593	237305	2921	3164

	F	361	460	574	743	1556	1704.	520	247186	3042	3296
U East	M	416	507	576	799	1655.	1858	495	811.	200189	1825
	F	301	382	478	620	1296	1420.	433 T		208735	1690
								[illegible]0>845			
U West	M	274	334	378	526	1087.	1221	325	800	1466	131019
	F	197	252	314	407	852	934 .	285	833	1666	136336
All	M	277000	350872	160318	499143.	389454	445777	219809	291554	248440.	164834
Regions	F	292002	371641	165829	519358.	407263	468961	227389	275673	235774.	156013

Source: 1960 Population Census

Appendix 4 Net Migration from Census Survival Method, Ghana, 1960-70

Region	Forward Method	Reverse Method	Mean
Western	-6207	-7529	-6868
Central	-39887	-48402	-44144
G Accra	184209	223554	203882
Eastern	-126852	-319425	-223139
Volta	-27049	-32822	-29939
Ashanti	36624	44454	40539
B Ahafo	107826	130861	119344
North	7937	9635	8786
U East	-95529	-115927	-105728
U West	-55635	-67517	-61576

Source: Computed from 1960 and 1970 Census Reports

Appendix 5 Net Migration from Census Survival Method, Ghana, 1970-84

Region	Forward Method	Backward Method	Mean
Western	-6368	-7788	-7078
Central	-101014	-123634	-112324
G Accra	143852	176081	159966
Eastern	-32623	-39922	-36272
Volta	-118143	-144599	-131371
Ashanti	10445	12796	11621
B Ahafo	2989	3665	3327
Northern	-65236	-79844	-72540
U East	-18283	-22374	-20329
U West	-8314	-10176	-9245

Source: Computed from 1970 and 1984 Census Reports

Appendix 6 Net Migration from Life Table Method, Ghana, 1960-70

Region	Enumerated Population	Expected Population	Net Migration
Western	509744	550033	-40289
Central	579260	649175	-69913
G Accra	589474	431742	157731
Eastern	826599	951700	-125101
Volta	613434	672670	-59236
Ashanti	950550	973947	-23397
B Ahafo	482769	516186	-33417
North	445953	471723	-25770
U East	363636	458983	-95351
U West	214607	336760	-122153

Source: Estimated from 1960 and 1970 Census data

Appendix 7 Net Migration from Life Table Method, Ghana, 1970-84

Region	Enumerated Population	Expected Population	Net Migration
Western	622793	680117	-57324
Central	626226	773556	-147330
G Accra	881967	766026	115941
Eastern	955806	1098074	-142268
Volta	655775	821370	-165595
Ashanti	1109992	1313775	-203783
B Ahafo	630227	718215	-87988
North	647392	649724	-2332
U East	410435	431645	-21210
U West	253016	271785	-18769

Source: Estimated from the 1970 and 1984 Census reports.

Appendix 8 Net Migration from combined Life Table and Census Method, Ghana, 1960-70

Region	Census Population	Life Table Population	Net Migration
Western	509744	550033	-40289
Central	581050	649175	-68125
G Accra	589466	431742	157724
Eastern	827099	951700	-124601
Volta	621434	672670	-52513
Ashanti	739560	973947	-24387
B Ahafo	482769	516186	-33417
Northern	435098	471923	-36625
U East	205953	458983	-253030
U West	350680	271783	78897

Source: Computed from Appendices 5, 6 and 7

Appendix 9 Net Migration from combined Life Table and Census Method,Ghana, 1970-84

Region	Census Population	Life Table Population	Net Migration
Western	636690	680117	-43427
Central	626373	773556	-147183
G Accra	794605	766026	28579
Eastern	955801	1098074	-142273
Volta	649533	821370	-180837
Ashanti	1166948	1313775	-146827
B Ahafo	591668	718215	-126547
North	630908	649724	-18816
U East	445929	431645	14284
U West	252865	271785	-18920

Source: Computed from Appendix 5, 6 and 7

Appendix 10 Net Migration to Brong Ahafo Region, 1960

Region of Birth	Enumerated in B Ahafo	Migrants from B Ahafo	Net Migration
Western	4329	931	3398
Central	5389	1156	4233
G Accra	3167	1178	1989
Eastern	12395	1509	10886
Volta	6895	741	6154
Ashanti	39751	16215	23536
Northern	15697	613	15084
U East	13081	928	12153
U West	8596	610	7986
Total	109300	23881	85419

Source: Derived from Appendix 1

Appendix 11 Net Migration to Ashanti Region, 1960

Region of Birth	Enumerated in Ashanti	Migrants from Ashanti	Net Migration
Western	21321	12218	14257
Central	26595	15193	11402
G Accra	8340	12231	-3891
Eastern	47152	16298	30854
Volta	16498	3446	13052
B Ahafo	16215	39751	-23536
Northern	28957	3933	25024
U East	24131	3278	20853
U West	15857	2155	13702
Total	205066	103349	101717

Source: Derived from Appendix 1

Appendix 12 Net Migration to Eastern Region, 1960

Region of Birth	Enumerated in Eastern	Migrants from Eastern	Net Migration
Western	18608	17662	946
Central	23197	21976	1221
G Accra	26050	58802	-32752
Volta	51763	14052	37711
Ashanti	16298	47152	-30854
B Ahafo	1509	12395	-10886
Northern	7843	1702	6141
U East	7052	1419	5633
U West	4635	933	3702
Total	156955	176093	-19138

Source: Derived from Appendix 1

Appendix 13 Net Migration to Central Region, 1960

Region of Birth	Enumerated in Central	Migrants from Central	Net Migration
Western	39661	22229	17432
G Accra	7748	18161	-10413
Eastern	21976	23197	-1221
Volta	12187	1939	10248
Ashanti	15193	26595	-11402
B Ahafo	1156	5389	-4233
Northern	7813	1069	6744
U East	6510	889	5621
U West	4178	586	3692
Total	116422	99954	16468

Source: Derived from Appendix 1

Appendix 14 Net Migration to Western Region, 1960

Region of Birth	Enumerated in Western	Migrants from Western	Net Migration
Central	22229	39661	-17432
G Accra	6230	14602	-8372
Eastern	1766	18608	-946
Volta	9795	1555	8240
Ashanti	12218	21321	-14257
B Ahafo	931	4329	-3398
Northern	6310	859	5451
U East	5248	717	4531
U West	3466	471	2995
Total	68193	91381	-23188

Source: Derived from Appendix 1

Appendix 15 Net Migration to Volta Region, 1960

Region of Birth	Enumerated in Volta	Migrants from Volta	Net Migration
Western	1555	9795	-8240
Central	1939	12187	-10248
G Accra	4369	30925	-26556
Eastern	14052	51763	-37711
Ashanti	3446	16498	-13052
B Ahafo	741	6895	-6154
Northern	6695	3542	3153
U East	5580	2945	2635
U West	3666	1939	1727
Total	42043	136489	-94446

Source: Derived from Appendix 1

Appendix 16 Net Migration to Northern Region, 1960

Region of Birth	Enumerated in North	Migrants from North	Net Migration
Western	859	6310	-5451
Central	1069	7813	-6744
G Accra	1265	5514	-4249
Eastern	1702	7843	-6141
Volta	3542	6695	-3153
Ashanti	3933	28957	-2524
B Ahafo	613	15697	-15084
U East	5963	1656	4307
U West	6460	1633	4829
Total	25406	82118	-56712

Source: Derived from Appendix 1

Appendix 17 Net Migration to Upper East Region, 1960

Region of Birth	Enumerated in U East	Migrants from U East	Net Migration
Western	717	5248	-4531
Central	889	6510	-5621
G Accra	1054	4593	-3538
Eastern	1419	7052	-5633
Volta	2945	5580	-2635
Ashanti	3278	24131	-20853
B Ahafo	928	13081	-12153
Northern	1656	5963	-4307
U West	3515	3132	383
Total	16401	75290	-58889

Source: Derived from Appendix 1

Appendix 18 Net Migration to Upper West Region, 1960

Region of Birth	Enumerated in U West	Migrants from U West	Net Migration
Western	471	3466	-2995
Central	586	4278	-3692
G Accra	692	3019	-2327
Eastern	933	4635	-3702
Volta	1939	3666	-1727
Ashanti	2155	15857	-13702
B Ahafo	610	8596	-7986
Northern	1633	6460	-4827
U East	3132	3515	-383
Total	12151	53492	-41341

Source: Derived from Appendix 1

Appendix 19 Net Migration to Greater Accra, 1970

Region of Birth	Enumerated in G Accra	Migrants from G Accra	Net Migration
Western	39593	9591	30002
Central	46400	11214	35186
Eastern	128672	34370	94302
Volta	77379	9108	68271
Ashanti	38059	12095	25964
B Ahafo	5629	4358	1271
Northern	11125	2805	8320
U East	6859	1671	5188
U West	5905	1600	4305
Total	359621	86812	272809

Source: Derived from Appendix 2

Appendix 20 Net Migration to Eastern Region, 1970

Region of Birth	Enumerated in Eastern	Migrants from Eastern	Net Migration
Western	23241	29846	-6605
Central	27267	34892	-7625
G Accra	34370	128672	-94302
Volta	71599	23261	48338
Ashanti	25656	59885	-34229
B Ahafo	4998	19577	-14589
Northern	8513	4099	4414
U East.	5688	2445	3243
U West	4042	2331	1711
Total	205374	297393	-92019

Source: Derived from Appendix 2

Appendix 21 Net Migration to Ashanti Region, 1970

Region of Birth	Enumerated in Ashanti	Migrants from Ashanti	Net Migration
Western	28649	26488	2161
Central	33660	30913	2747
G Accra	12095	38059	-25964
Eastern	59885	25656	34229
Volta	24503	7213	17290
B Ahafo	32020	59260	-27240
Northern	44720	11070	33650
U East	30745	6583	24162
U West	17701	6334	11367
Total	283978	185612	98366

Source:Derived from Appendix 2

Appendix 22 Net Migration to Central Region, 1970

Region of Birth	Enumerated in Central	Migrants from Central	Net Migration
Western	22555	54205	-31650
G Accra	11214	46400	-35186
Eastern	34892	27267	7625
Volta	17397	3644	13753
Ashanti	30913	33660	-2747
B Ahafo	6393	7721	-1328
Northern	8965	2717	6248
U East	5645	1615	4030
U West	4885	1555	3330
Total	142859	173290	-30431

Source: Derived from Appendix 2

Appendix 23 Net Migration to Western Region, 1970

Region of Birth	Enumerated in Western	Migrant from Western	Net Migration
Central	54205	22555	31650
G Accra	9591	39593	-30002
Eastern	29846	23241	6605
Volta	14878	3106	11770
Ashanti	26488	28649	-2161
B Ahafo	5481	6599	-1118
Northern	7752	2326	5426
U East	4911	1393	3518
U West	4174	1314	2860
Total	157326	128778	28548

Soure: Derived from Appendix 2

Appendix 28 Net Migration to Volta Region, 1970

Region of Birth	Enumerated in Volta	Migrants from Volta	Net Migration
Western	3108	14878	-11770
Central	3644	17397	-13753
G Accra	9108		
	77379		-68271
Eastern	23261	71599	-48338
Ashanti	7213	24503	-17290
B Ahafo	2203	16852	-14649
Northern	10230	7961	2269
U East	6028	4748	1280
U West	5962	4529	1433
Total	70757	216306	-145549

Source: Derived from Appendix 2

Appendix 25 Net Migration to the Northern Region, 1970

Region of Birth	Enumerated in North	Migrants from North	Net Migration
Western	2326	7752	-5426
Central	2717	8965	-6248
G Accra	2805	11125	-8320
Eastern	4099	8513	-3243
Volta	7961	10230	-2269
Ashanti	11070	44720	-33650
B Ahafo	4059	32854	-28795
U East	3650	7821	-4171
U West	3216	8477	-5261
Total	41903	139286	-97383

Source: Derived from Appendix 2

Appendix 26 Net Migration to Upper West Region, 1970

Region of Birth	Enumerated in U West	Migrants from U West	Net Migration
Western	1314	4174	-2860
Central	1555	4885	-3330
G Accra	1600	5905	-4305
Eastern	2331	4042	-1711
Volta	4529	5962	-1433
Ashanti	6334	17701	-11367
B Ahafo	2350	13005	-10655
Northern	8477	3216	5261
U East	4679	4156	523
Total	33169	63046	-29877

Source: Derived from Appendix 2

Appendix 27 Net Migration to Upper East region, 1970

Region of Birth	Enumerated in U East	Migrants from U West	Net Migration
Western	1393	4172	-3221
Central	1615	4885	-3330
G Accra	1671	6859	-5188
Eastern	2445	5688	-3243
Volta	4748	6028	-1280
Ashanti	6583	30745	-24162
B Ahafo	2399	22587	-20188
Northern	7821	3621	4171
U West	4156	4679	-523
Total	32831	89355	-56524

Source: Derived from Appendix 2

Appendix 28 Net Migration to Brong Ahafo, 1970

Region of Birth	Enumerated in B Ahafo	Migrants from B Ahafo	Net Migration
Western	6599	5481	1118
Central	7721	6393	1328
G Accra	4358	5629	-1271
Eastern	19577	4998	14589
Volta	16852	2203	14649
Ashanti	59260	32020	27240
Northern	32854	4059	28795
U East	22587	2399	20188
U West	13005	2350	10655
Total	182813	65522	117291

Source: Derived from Appendix 2

Appendix 29 Net Migration to Greater Accra, 1984

Region of Birth	Resident in Accra	Migrants from Accra	Net Migration
Western	66255	13316	52939
Central	73414	18722	54692
Eastern	184077	54256	129821
Volta	112581	13864	98717
Ashanti	75919	19596	56323
B Ahafo	10737	6495	4242
North	27489	4913	22576
U East	12058	2838	9220
U West	9018	2020	6998
Total	571548	137927	433621

Source: Computed from 1984 Census Data

Appendix 30 Net Migration to Ashanti Region, 1984

Region of Birth	Enumerated in Ashanti	Out-Migrants from Ashanti	Net Migration
Western	42860	33834	9026
Central	41899	43202	-1307
G Accra	19596	75919	-56323
Eastern	87026	33822	53204
Volta	22833	7559	15274
B Ahafo	50136	82045	-31909
North	70106	14141	55965
U East	44588	8407	36181
U West	26582	8523	18059
Total	405626	307456	98170

Source: Computed from 1984 Census Data

Appendix 31 Net Migration to Eastern Region, 1984

Region of Birth	Enumerated in Eastern	Out-Migrants from Eastern	Net Migration
Western	33377	36434	-3057
Central	32570	49462	-16892
G Accra	54256	184077	-129821
Volta	99230	32025	67205
Ashanti	33822	87026	-53204
B Ahafo	6532	24802	-18170
North	12581	9127	3454
U East	7887	4564	3323
U West	5860	4554	1306
Total	286115	431971	-145856

Source: Computed from 1984 Census Data

Appendix 32 Net Migration to Central Region

Region of Birth	Enumerated in Central	Out-migrants from Central	Net Migration
Western	32753	56233	-23480
G Accra	18722	73414	-54692
Eastern	49462	32570	16892
Volta	22809	3997	18812
Ashanti	43206	41899	1307
B Ahafo	8830	10337	-1507
North	13209	4597	8611
U East	7534	1700	5834
U West	6538	2845	3693
Total	14072	38602	-24530

Source: Computed from 1984 Census Data

Appendix 33 Net Migration to Western Region, 1984

Region of Birth	Enumerated in Western	Migrants from Western	Net Migration
Central	56233	32753	23480
G Accra	13316	66255	-52939
Eastern	36434	33377	3057
Volta	18720	4242	14478
Ashanti	33834	42860	-9062
B Ahafo	7893	8983	-1090
North	10631	3182	7449
U East	5399	1560	3839
U West	4959	1061	3898
Total	187419	194273	-6854

Source: Computed from 1984 Census Data

Appendix 34 Net Migration to Volta Region, 1984

Region of Birth	Enumerated in Volta	Migrants from Volta	Net Migration
Western	4242	18720	-14478
Central	3997	22809	-18812
G Accra	13864	112581	-98717
Eastern	32025	99230	-67205
Ashanti	7559	22833	-15274
B Ahafo	3266	15398	-12132
Northern	17526	10712	6814
U East	7918	5346	2572
U West	7452	5370	2082
Total	97849	320451	-222602

Source: Computed from 1984 Census Data

Appendix 35 Net Migration to Brong Ahafo, 1984

Region of Birth	Enumerated in B Ahafo	Migrants from B Ahafo	Net Net Migration
Western	8983	7893	1090
Central	10337	8830	1507
G Accra	6495	10737	-4242
Eastern	24702	6532	18170
Volta	15398	3266	12132
Ashanti	82045	50136	31909
North	52826	6078	46748
U East	32922	4203	28719
U West	18460	4165	14295
Total	252168	101840	150328

Source: Computed from 1984 Census Data

Appendix 36 Net Migration to Northern Region

Region of Birth	Enumerated in North	Migrants from North	Net Migration
Western	3182	10631	-7449
Central	4597	13209	-8611
G Accra	4913	27489	-22576
Eastern	9127	12581	-3454
Volta	10712	17526	-6814
Ashanti	14141	70106	-55965
B Ahafo	6078	52826	-46748
U East	5430	12540	-7110
U West	4519	14721	-10202
Total	62645	111549	-48904

Source: computed from 1984 Census Data

Appendix 37 Net Migration to Upper East Region, 1984

Region of Birth	Enumerated in U East	Migrants from U East	Net Migration
Western	1560	5399	-3839
Central	1700	7534	-5834
G Accra	2838	12058	-9220
Eastern	4564	7887	-3323
Volta	5346	7918	-2572
Ashanti	8407	44588	-36181
B Ahafo	4203	32922	-28719
North	12540	5430	7110
U West	5200	6621	-1421
Total	46358	130357	-83999

Source: Computed from 1984 Census Data

Appendix 38 Net Migration to Upper West Region, 1984

Region of Birth	Enumerated in U West	Migrants from U West	Net Migration
Western	1061	4959	-3898
Central	2845	6538	-3693
G Accra	2020	9018	-6998
Eastern	4554	5860	-1306
Volta	5370	7452	-2082
Ashanti	8523	26582	-18059
B Ahafo	4165	18460	-14295
North	4519	14727	-10202
U East	6621	5200	1421
Total	39678	98790	-59112

Source: Computed from 1984 Census data

Appendix 39. Migration Entropy by Sex, Ghana, 1960-84

Year	Sex	Ps	Pm	Entropy
1960	M	.83	.17	0.20
	F	.86	.14	0.18
1970	M	.80	.20	0.22
	F	.83	.17	0.20
1970	M	.79	.21	0.22
	F	.83	.17	0.20

Source: Computed from Appandices 1, 2, and 3

Appendix 40. Migration Entropy, Regions of Ghana, 1960 (males)

Region	Ps	Rank	Entropy	Rank
Western	.807	8	.820	7
Central	.854	3	.890	6
G Accra	.808	7	.935	8
Eastern	.815	4	1.120	9
Volta	.810	6	.520	4
Ashanti	.864	2	1.361	10
B Ahafo	.941	1	.791	5
Northern	.814	5	.430	3
U East	.806	9	.281	1
U West	.795	10	.311	2

Source: Computed from Appendix 1

Appendix 41. Migration Entropy, Regions of Ghana, 1960 (Females)

Region	Ps	Rank	Entropy	Rank
Western	.834	9	.60	6
Central	.869	6	.707	8
G Accra	.830	10	.731	9
Eastern	.839	8	.940	10
Volta	.846	7	.468	4
Ashanti	.898	2	.706	7
B Ahafo	.950	1	.597	5
Northern	.897	3	.330	3
U East	.885	4	.287	2
U West	.874	5	.235	1

Source: Computed from Appendix 1

Appendix 42. Migration Entropy, Regions of Ghana, 1970 (Males)

Regions	Ps	Rank	Entropy	Rank
Western	.812	4	.837	5
Central	.794	7	.895	6
G Accra	.822	3	1.294	9
Eastern	.756	9	1.104	8
Volta	.753	10	.632	4
Ashanti	.823	2	1.447	10
B Ahafo	.884	1	.968	7
Northern	.797	5	.467	3
U East	.795	6	.419	2
U West	.792	8	.369	1

Source: Computed from Table 15

Appendix 43. Migration Entropy, Regions of Ghana, 1970 (Females)

Region	Ps	Rank	Entropy	Rank
Western	.835	6	.578	4
Central	.805	8	.842	7
G Accra	.844	5	1.116	9
Eastern	.782	10	.966	8
Volta	.793	9	.658	5
Ashanti	.861	4	1.215	10
B Ahafo	.901	1	.773	6
Northern	.865	3	.387	3
U East	.895	2	.296	1
U West	.823	7	.383	2

Source: Computed from Table 15

Appendix 44. Migration Entropy, Regions of Ghana, 1984 (Males)

Region	Ps	Rank	Entropy.	Rank
Western	.812	4	.502	4
Central	.794	7	.895	6
G Accra	.822	3	1.403	9
Eastern	.756	9	1.118	8
Volta	.753	10	.620	5
Ashanti	.823	2	1.432	10
B Ahafo	.884	1	.988	7
Northern	.797	5	.474	3
U East	.795	6	.414	2
U West	.792	8	.389	1

Source: Computed from Table 14

Appendix 45. Migration Entropy, Regions of Ghana, 1984 (Females)

Region	Ps	Rank	Entropy	Rank
Western	.830	6	.650	5
Central	.810	8	.743	6
G Accra	.846	5	1.209	9
Eastern	.780	10	.959	8
Volta	.781	9	.570	4
Ashanti	.860	4	1.231	10
B Ahafo	.899	1	.762	7
Northern	.864	3	.406	3
U East	.893	2	.306	1
U West	.817	7	.376	2

Source: Computed from Table 14

Appendix 46. Migration Inequality, Ghana, 1960

Region	qi	pi	qi Log (qi/pi)
Western	.092	.112	-.008
Central	.127	.093	.017
G Accra	.162	.081	.049
Eastern	.172	.151	.010
Volta	.046	.116	-.018
Ashanti	.223	.164	.030
B Ahafo	.119	.087	.016
Northern	.028	.079	-.013
U East	.018	.070	-.011
U West	.013	.043	-.007
Total			.065

Source: Computed from tables 5 and 36

Appendix 47. Migration Inequality, Ghana, 1970

Region	qi	pi	qi Log (qi/pi)
Western	.104	.090	.007
Central	.095	.104	-.004
G Accra	.238	.106	.084
Eastern	.136	.141	-.002
Volta	.047	.111	-.018
Ashanti	.188	.173	.007
B Ahafo	.121	.090	.016
Northern	.028	.085	-.014
U East	.022	.063	.010
U West	.022	.037	-.005
Total			.081

Source: Computed from tables 6 and 65

Appendix 48. Migration Inequality, Ghana, 1984

Region	qi	pi	qi Log (qi/pi)
Western	.085	.092	-.003
Central	.092	.094	-.094
G Accra	.258	.116	.090
Eastern	.129	.138	-.004
Volta	.044	.098	-.015
Ashanti	.184	.171	.006
B Ahafo	.114	.097	.008
Northern	.028	.095	.015
U East	.043	.063	-.007
U West	.022	.036	-.047
Total			-.051

Source: Computed from tables 7 and 65

Appendix 49. TFR and CDR, Regions of Ghana, 1960-84

Region	Total Fertility Rate		Crude Death Rate	
	1960-70	1970-84	1960-70	1970-84
Western	6.7	6.1	15	12
Central	7.3	6.6	19	13
G Accra	5.4	4.9	8	6
Eastern	7.1	6.7	17	13
Volta	6.6	6.4	18	14
Ashanti	7.8	7.3	18	13
B Ahafo	7.9	7.3	19	14
Northern	6.4	6.0	24	18
U East	6.2	5.9	27	18
U West	6.2	5.8	27	17

Source: Gaisie and De Graft-Johnson 1976; Author's estimates

Appendix 50. Net Migration from Balancing Equation, Ghana, 1960-70

Region	Enumerated Population	Expected Population	Net Migration
Western	509744	540021	-30277
Central	579260	629181	-49921
G Accra	589474	400302	189172
Eastern	826599	940400	-113801
Volta	613434	661600	-48166
Ashanti	950550	964122	-13572
B Ahafo	482769	505020	-22251
Northern	445953	466700	-20747
U East	363636	448512	-84876
U West	214607	316802	-102195

Appendix 51. Net Migration from Balancing Equation, Ghana, 1970-84

Region	Enumerated Population	Expected Population	Net Migration
Western	622793	691033	-68240
Central	626226	783448	-157222
G Accra	881967	761931	120936
Eastern	955806	1198170	-242364
Volta	655775	843360	-187585
Ashanti	1109992	1210784	-100792
B Ahafo	630227	728216	-97989
Northern	647392	658733	-11341
U East	410435	440644	-30209
U West	253016	288901	-35885

Appendix 52. Rank-Size Rule, Ghana, 1960

City	Population	Rank	% of Main City
Accra	337800	1	
Kumasi	180600	2	53
Cape Coast	41200	3	12
Takoradi	40900	4	12
Tamale	40400	5	12
Koforidua	34900	6	10
Sekondi	34500	7	10
Winneba	25400	8	08
Obuasi	22800	9	07
Nsawam	20200	10	06

Appendix 53. Rank-Size Rule, Ghana, 1970

City	Population	Rank	% of main city
Accra	564200	1	
Kumasi	260300	2	46
Tamale	83700	3	15
Tema	60800	4	11
Takoradi	58200	5	11
Cape Coast	51700	6	09
Koforidua	46200	7	08
Teshie	39400	8	07
Sekondi	33700	9	06
Tafo	33700	9	06
Obuasi	31000	10	05

Appendix 54. Rank-Size Rule, Ghana, 1984

City	Population	Rank	% of main city
Accra	859600	1	
Kumasi	348900	2	41
Tamale	136800	3	16
Tema	99600	4	12
Teshie	63000	5	07
Takoradi	61500	6	07
Obuasi	60100	7	07
Cape Coast	57700	8	07
Koforidua	54400	9	06
Tafo	50400	10	06

Appendix 55. Rank-Size Coefficient, Ghana, 1960-84

Year	Coefficient
1960	-1.1909
1970	-1.2384
1984	-1.2568

Appendix 56. Direct Effects of Employment and Population Growth on Net Migration

Variable	Variance Explained	Slope Beta
Employment	.54	2.218829
Pop Growth		-.397177

Source: Regression Results

Appendix 57 Refined Economic Activity Rate, Ghana, 1960-84

Region	Activity Rate in Percentages		
	1960	1970	1984
Western	78.9	78.9	78.6
Central	80.7	79.5	78.5
G Accra	75.5	74.1	86.6
Eastern	78.5	76.3	79.9
Volta	66.3	74.1	72.0
Ashanti	79.9	77.7	77.3
B Ahafo	73.3	79.8	80.1
Northern	53.2	58.8	68.3
U East	52.3	54.4	54.8
U West	48.7	52.0	53.1

Source: Computed from 1960, 1970, and 1984 census data

Appendix 58 Number of Schools per population aged 0-14, Ghana, 1960-84

Region	Schools/100,000 Population		
	1960	1970	1984
Western	53.0	43.3	75.1
Central	54.7	61.5	73.5
G Accra	75.5	77.1	86.7
Eastern	48.5	45.3	42.3
Volta	26.3	44.1	42.0
Ashanti	73.9	74.7	67.3
B Ahafo	73.3	78.8	80.9
Northern	33.2	38.8	68.4
U East	42.3	54.4	53.6
U West	48.7	51.0	50.1

Source: Computed from 1960, 1970, and 1984 census data